Self-directed workgroups:

An inquiry into the effects of human difference perception, demographical group composition, and information diversity on short task performance

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Abstract

The current dissertation has been designed with the attempt to seek a better understanding of the requirements for prospective workgroup members to fit demands of today's organizations. Members' willingness to cooperate appears to be a key factor unlocking their ability to act upon any given task. Quantitative as well as qualitative data have been gathered in the context of an explorative study. A questionnaire (Intercultural Attitude Orientation) has been constructed with the intent to sense individuals' attitude toward diversity across populations diverging in age, gender, nationality, and occupational status. The explorative study involved the participation of 1351 individuals from 97 different countries. Out of twelve explorative items, one factor solution was extracted, thus building the final 8-item scale.

An experimental group study was designed to elicit decision-making procedures set to entangle whether or not members' readiness to cooperate enhances group performance in the context of a short and cognitively demanding task. The experimental study involved the participation of 249 individuals randomly assigned into workgroups. The two independent variables were group demographical composition and information diversity. Demographical composition was defined either according to national or gender demographics. The outcome variables were measures of workgroup performance.

It was found that despite workgroup demographical composition, groups which received diverse information, performed better than workgroups, which received similar information. Members' quality and quantity of exposure to diversity, attitude toward diversity, social dominance orientation, satisfaction, cooperation, work-style similarity, and number of spoken languages were separately analyzed with regard to group outcomes. Findings revealed that these measures were in some cases linked to one another, thus affecting group process.

Keywords:

international workgroups, attitude toward diversity, readily-detectable human characteristics, deep-level human characteristics, exposure to diversity, foreign language acquisition, workgroup performance, cooperation, satisfaction, information diversity, Social Dominance Orientation

Zusammenfassung

Die vorliegende Dissertation wurde mit dem Ziel entworfen, ein besseres Verständnis zu erlangen, was die Anforderungen sind, die den künftigen Arbeitsgruppenmitgliedern erlauben, Bedürfnissen von modernen Unternehmen zu genügen. Die Kooperationsbereitschaft von Gruppenmitgliedern scheint ein Schlüsselfaktor zu sein, der ihre Fähigkeit freisetzt, einer beliebigen Aufgabe entgegen zu handeln. Quantitative wie auch qualitative Daten wurden im Rahmen einer explorativen Studie erhoben. Ein Fragebogen (Intercultural Attitude Orientation) wurde mit der Absicht entwickelt, Einstellung von Individuen gegenüber Diversität quer durch Populationen abzufragen. An der explorativen Studie haben 1351 Individuen aus 97 Ländern teilgenommen. Bei einer Faktorenanalyse von 12 Items wurde die entgültige acht Items umfassende Skala gebildet.

Eine experimentelle Gruppenstudie wurde entworfen, um Entscheidungsprozesse anzustoß en, die erkennen lassen, ob die Kooperationsbereitschaft der Gruppenmitglieder die Gruppenperformanz erhöht. An der experimetellen Studie haben 249 Individuen teilgenommen, die nach einem Zufallsverfahren in Arbeitsgruppen eingeteilt wurden. Die unabhängigen Variablen waren demografische Gruppenkomposition und Informationsdiversität. Die abhängigen Variablen waren Messungen der Gruppenperformanz.

Es wurde festgestellt, dass trotz der demografischen Gruppenkomposition Arbeitsgruppen, die Pakete mit unterschiedlichen Informationen erhielten, besser abgeschnitten haben, als Gruppen, denen Pakete mit ähnlichen Informationen zur Verfügung gestellt wurden. Erfahrung der Gruppenmitglieder mit Diversität, ihre Einstellung gegenüber Diversität, Social Dominance Orientation, Zufriedenheit, Kooperation, Ähnlichkeit in Arbeitsstil und Anzahl der gesprochenen Sprachen wurden getrennt im Hinblick auf die Gruppenergebnisse analysiert. Es wurde herausgefunden, dass diese Messungen in einigen Fällen zueinander in Beziehung standen, was einen Einfluß auf Gruppenprozess hatte.

Schlagwörter:

Internationale Arbeitsgruppen, Einstellung gegenüber Diversität, Wahrnehmung menschlicher Unterschiede, Erfahrung mit Diversität, Fremdspracherwerb, Gruppenperformanz, Kooperation, Zufriedenheit, Informationsdiversität, Soziale Dominanzorientierung

Contents

1 Introduction

The following introduction will inform the reader about factors affecting human willingness and ability to cooperate in complex and diverse environments. The need for researching this topic is based upon past and current scientific workgroup research. This investigation addresses the requirements for employees to fit within a demographically unfamiliar workforce.

Many carefully designed studies suggest several causes why demographically homogeneous workgroups tend to perform more effectively than heterogeneous workgroups (Williams & O'Reilly, 1998). This has been confirmed in laboratory experiments (Wiersema & Bantel, 1992). In real settings, many organizational members (e.g., politicians) believe that in order to debate on different issues (e.g., solve problems) the requirements are to be similarity in backgrounds and sharing of a strong common identity (Gurin, 1998).

Scholars suggest that workgroup homogeneity is often preferred, because as group members' visible dissimilarities (i.e., readily-detectable characteristics) augment, factors such as trust (Jackson et al., 1995; Putnam, 2002; Reagans et al., 2004), empathy (Brewer, 1999), cooperation (Baugh & Graen, 1997; Kirchmeyer, 1995), group involvement (Hobman et al., 2004), interpersonal communication (De Dreu & Weingart, 2003; Hoffman, 1985; Pelled, 1996; Wagner et al., 1984), participation in discussion (Mertz et al., 1998), effective communication (Steiner, 1972), affective reactions (Kirchmeyer, 1993), participation in decision-making (Lichtenstein et al., 1997), the speed and the proficiency of decision-making processes (Larkey, 1996) as well as members' commitment (Tsui et al., 1992) tend to decrease.

According to Devine (1989), working within a demographically heterogeneous workgroup requires from its members extra cognitive work. Interaction in such workgroups often asks for behavioral control, self-regulation, and even thought suppressions (Devine, 1989; Dovidio & Gaertner, 1998; Richeson et al., 2003; Von Hippel et al., 2000). Such situations are often perceived as punishment, because working with dissimilar others tends to be difficult in generating a rewarding experience (Berscheid, 1985). Furthermore, according to Kraut and Higgins (1984), when group members are confronted with different world views and perspectives, information processing requires more cognitive complexity, which increases uncertainty and lowers the possibility for mutual understanding.

Clearly, if group members are feeling drained due to considerable cognitive efforts when interacting with dissimilar others, group process as well as outcomes will suffer as a result.

Yet, during the previous centuries, "diversity", i.e., workgroups composed of men and women with different cultural backgrounds (e.g., nationalities), strongly contributed toward performance (e.g., economical development) (Nunn, 2007).

Many members of such workgroups had to evolve together with no common language (De Silva, 2006). As a matter of fact, this occurred much before the word "diversity" appeared in the organizational literature. At the time, the effects of diversity were managed by hegemonic means of influence. Merchants selected individuals according to their graded abilities (e.g., accounting) prior to buying them (Fleischman et al., 2004). Groups in power (e.g., colonizers) have made gain from the sweat of demographically heterogeneous workgroups, and this only with meager cognitive efforts, i.e., they did not need to listen to others, argue, negotiate, and/or take into account others' perspectives (see Eisenberg and Goodall, 2001, for a review of historical facts on organizational communication). Many achieved this by imposing themselves "from above". According to Ballard (2006), the status quo has pushed many others (e.g., immigrants) to overwhelmingly enter constructed empires "from below". Former colonial powers started to experience this phenomena in the early 1970's (Hooghe et al., 2006), but not in a negative way. According to the American Ambassador in Berlin, William R. Timken, Jr., "the demand for strong immigrant backs to build new industries and cities is past, [the demand is now] replaced by the need for technological expertise and the skills required to compete for new, more demanding jobs" (Timken (Jr.), July 11, 2006).

This shift reflects in fact a wave of 185 to 200 million people who have migrated away from their country of origin (R. Süssmuth, 2006). In the United States of America, it has been anticipated that "within the next decade a major portion of the workforce will be composed of women, minorities, and immigrants" (Borman et al., 1997, p.255). Furthermore, assuming that in the US illegal immigration keeps increasing at today's rate, 13.4 million individuals will be added by 2030 and 37.9 million by 2060 (Camarota, 2007). In parallel, from now until 2030 European Union countries will increasingly suffer from shortage of those of working age. About 20.8 million of people will be either too young or too old to work (European Commission Green Paper, 2005). To a lesser pronounced degree, it has been projected that an older population will disproportionably grow in Australia, New Zealand, Canada, Singapore, Hong Kong, Taiwan and South Korea (Paparelli, 2006). Among all industrial countries, Japan has a very low immigrant allowance, but one of the greatest population aging rate (Curtin, 2002).

In spite of an increasing workforce shortage, many EU countries still have very rigid policies toward immigrants. However, people from all over the world are striving to make their way to EU countries (European Trade Union Confederation, 2005). Even though about 2 million third-country nationals migrate into European Union nations each year (DW-World.de, 2007), their total population keeps decreasing (Rytlewski & Wuttke, 2004), thus progressively and continuously diluting the demographical homogeneity of organizations and society in general.

In fact, mother earth is growing at about 78 million new humans each year. This increase takes place almost exclusively in developing countries (DSW-Datenreport, 2008). People from regions in which the ratio of younger citizens is increasing are highly motivated. Naturally overcrowded populations need to reestablish a healthy balance, and immigration is often a way to prevent "behavioral sink" (see Calhoun, 1958; Hall, 1966, for a review of concept). Thus, in order to adapt to

their environment, people with different cultural backgrounds will shift from one area to another. Sooner or later, they and/or their children are going to be ready to enter our workforce at all levels of the hierarchy.

A similar shifting phenomenon is also taking place in higher organizational settings. While important investors from first world countries often were able to buy shares in corporations from the second and/or third world countries, the inverse is increasingly taking place (Aykut & Ratha, 2003). As a result, it has been anticipated that by 2010 about 30 to 40 percents of senior managers in multinational corporations will be from China, India, Indonesia or Brazil (Zweifel, 2003).

In addition to current and upcoming demographical changes in our organizations, institutions, and society in general, the nature of many different tasks as well as global issues to solve is sharpening in complexity. Experts in applied statistics specifically illustrate global uncertainties in the following way:

> The importance of the proper treatment of uncertainties is growing because the consequences of inadequate treatments are more and more costly, both in social and environmental terms. This is caused by the quickly changing world where one of the dominating driving forces is efficiency, which has led to globalization, increased interdependencies amongst more and more diversified socio-economic, technological and environmental systems, a reduction in many safety (both technological and social) margins, a concentration of assets in risk prone areas, and other factors which progressively contribute to the increasing vulnerability of the societies. (Marti et al., 2006, Preface)

People, money, time and resources are sacrified in order to provide products with appropriate features, quality, price and availability to customers (Zirger & Hartley, 1996). In such a "cul-de-sac", solving problems could soon present an exponential increase in complexity. Especially as the workforce appears to be confronted with highly paradoxical and even counterproductive organizational goals: technologies to send humans to Mars versus technologies to develop cutting edge weapons; strategies to enhance corporate images versus strategies to lower work wages; fostering robotics versus fostering employment programs; chemistry to better cure diseases versus chemistry to better fertilize food products.

Furthermore, as the global resources increase in scarcity, climate change is more and more abrupt, the social and organizational complexities are arising screaming for effective cooperation between and across groups.

Nevertheless, recruiters are struggling to find people able to embrace differences and take advantage of them, particularly for management positions (Rifkin, 2006). Teagarden spent about 26 years analyzing managerial positions in the global economy (in Rifkin, 2006). Among the most important components of global mindset required for members to effectively act within diverse workgroups she identified the followings:

1. a belief that differences matter
2. openness to new and different ideas

3. cognitive complexity (i.e., the acquired ability to focus on people's deep-level characteristics, both hard and soft skills)

Other scholars foster similar competences, specifically when members from different nationalities have only a short time to fit into new workgroups prior to taking actions. For instance, Wills and Barham (1994) have classified these competences into three categories:

1. cognitive complexity (e.g., understanding people having a different cultural background, ability to listen to and include others' perspectives)
2. emotional energy (e.g., awareness of one's own emotions and their effect on others)
3. psychological maturity (e.g., eagerness to learn, ability to respect individuals' dignity, a well developed self-concept)

As a result of implications caused by shifting demographics and rapidly evolving markets, countries feel required to prepare their citizens to effectively deal with social issues as well as organizational challenges. Individuals active in any field of work are encouraged to spend some time abroad. They learn foreign languages and are in contact with natives on a daily basis. Several researchers suggest that a long term exposure to new and different environments increases tolerance for ambiguities (McLain, 1993), sharpens cognitive complexity (Antonio et al., 2004) and improves self-concepts (Antonio, 1998; Astin, 1993; Chang, 1999; Harper, 2005). In short, when being often confronted with novel situations in various settings, individuals acquire the very specific "global mindset" as well as desired competences, which potentially enable effective cooperation within demographically heterogeneous workgroups.

The Global Education Digest has recently reported that between 1999 and 2004 the number of mobile students worldwide increased by 41 percent, i.e., from 1.75 to 2.5 millions (2006). However, most students from North America and Western Europe (90 percent in 2004) study within western countries. In comparison to students from all other parts of the world, mobile students from western countries (486'601 in 2004) respectively experience by and large demographically homogeneous exposures. For instance, East Asia and the Pacific regions count nearly twice as many mobile students (700'999 in 2004), and only 40 percent of them are studying within similar countries. Only 13 percent of mobile Arabian students study in Arabian states. Similarly, about 16.5 percent of Latin Americans & Caribbeans, 20 percent of Central & Eastern Europeans, and 21 percent of Sub-Saharan students are studying within regions having a similar cultural background (Global Education Digest, 2006). In the long run, such trends might disproportionately increase the cognitive complexity of some individuals - at the expense of others - enabling them to better deal with difficult and ambiguous organizational challenges.

Nevertheless, the anticipation of such upcoming challenges has not been disregarded. For instance, these challenges have caused several scholars to focus their attention on re-investigating how human cognitive complexity influences the ability to deal with turbulent environments (Hunsaker, 2007), to integrate and fit

within international workgroups (Iles & Hayers, 1997), to work effectively with different others (Iles, 1995), to solve problems (Montuori, 2003; Palmer & Dunford, 1996), and to make strategic decisions (Calori et al., 1994).

However, research reflecting how attitude toward human differences (e.g., cultural and/or status) affects group members' predisposition to cooperate with diverse others is rather rare. Literature on diverse workgroups thus far has not provided evidence as to whether specific characteristics and/or competences (e.g., quantity and quality of exposure to diversity, the amount of spoken languages) may stimulate someone's willingness and ability to cooperate, especially when accomplishing complex tasks in complex environments (e.g., randomly formed workgroups having to evolve with an unknown type of task in a short amount of time). Hence, I suggest researching whether human attitude toward diverse others relates to and/or affects group cooperation as well as task achievement (i.e., ability to contribute, share information, and include others' contributions in decision-making procedures).

Leading such a research study today requires a specific understanding as well as reflection of both hard and soft data. Experts in natural sciences advise as follow:

> Traditional scientific approaches usually rely on real observations and experiments. Yet not sufficient observations exist for new problems, and "pure" experiments and learning by doing may be very expensive, dangerous, or simply impossible. In addition, available historical observations are often contaminated by "experimentator", i.e., our actions, and policies. The complexity of new problems does not allow us to achieve enough certainty just by increasing the resolution of models or by bringing in more links. They require explicit treatment of uncertainties using "synthetic" information composed of available hard data from historical observations, results of possible experiments, and scientific facts as well as "soft" data from experts' opinions, scenarios, stakeholders, and public opinion. (Marti et al., 2006, Preface)

While pursuing the current investigation, it is intended to take into account the above suggested conception. In the next few lines, the content of the current investigation will be chronologically outlined. The theoretical framework as introduced in **chapter 2** critically reviews the literature on workgroup performance while systemically relating it to demographical group composition and members' perception of human differences. Predictions as well as research questions are suggested accordingly. **Chapter 3** reports each step of the explorative study, which purpose is to bring an understanding of how self-reported human characteristics and/or competences (e.g., level of exposure to diversity) relate to attitudes. Validated measures resulting from the explorative study are extrapolated into the design of the workgroup experiment, which is described in **chapter 4**. The experimental study is supposed to test the effect of self-reported measures (e.g., attitude) and perceptive measures (e.g., cooperation, satisfaction) on factual measures (e.g., workgroup performance). The implications and potential applications of both the explorative and the experimental studies are discussed in

chapter 5.

2 Theoretical Framework

The theoretical framework to be used in this study reflects the interdependence of Five Aspects of Congruence (cognitive, skill-related, affective, conative, and normative) among group members (Scholl, 1996, 2003). With regard to group interaction, during the accomplishment of a task members possessing similar knowledge and levels of thinking establish a cognitive congruence. If members also possess similar skills, there is a skill-related congruence. Sympathy toward others reflects an affective congruence. Members' readiness and ability to cooperate with one another represent a conative congruence. There is a normative congruence when members experienced a similar socialization (e.g., they are from the same country of origin or the same sub-culture).

To date, there are countless known and unknown effects that may impede or enhance workgroups' performance. Each aspect of congruence relates most often directly to the cause of each effect. For instance, group members with different norms may have different work-styles, which in turn may impede group process. The least congruence among members, the more chances for unknown effects (positive or negative) to occur. Some of these effects warrant further scrutiny.

As previously mentioned, a cognitive congruence takes place when interacting group members share similar cognitions (Scholl, 1996), which is more common in demographically homogeneous workgroups. However, the more group members differ in knowledge (e.g., different education), the more they can learn from one another, (i.e., the more they can potentially contribute toward positive task outcomes). But at the same time, when the difference of views and perspectives increases, at some point the frequency of understanding among members will decrease. This will occur even if workgroup members are from different countries (normative non-congruence), and each member has a positive attitude toward diversity (affective congruence). In this regard, Scholl (1996) suggests a curvilinear effect between an increase of potential generated by diverse information/expertise/perspectives and a decrease of action capability due to potential overload of information/expertise/perspectives. According to van Knippenberg and Schippers (2007), positive outcomes generated by people having different cultural backgrounds may only be achieved up to a certain level of differences. Recently, scholars have empirically tried to find out what "diversity dosage" is the most beneficial to workgroups (Brodbeck, 2003; Dahlin et al., 2005). They found that a moderate level of diversity generates most positive contribution toward workgroup outcomes. Nevertheless, as van Knippenberg and Schippers (2007) acknowledge it, such a relationship is far from straightforward. There are in fact other interacting factors which may mediate between levels of workgroup diversity and performance.

The current theoretical framework will enable us to discover which factors should

be taken into consideration when investigating the effects of diversity on workgroup performance. Although it is well documented that demographical workgroup composition may affect group dynamics as well as task outcomes, "the exact nature of diversity's impact remains the subject of debate" (Sommers, 2006, p.598). The theoretical framework will examine the perspectives of two different schools of thought.

The first school of thought is mainly based on theories revealing the causes for frictions among workgroup members. For instance, the genetic similarity theory (Rushton & Russell, 1984) and the self-other differentiation (Shaw & Wong, 1989) predispose diverse groups to uncooperativeness. The social categorization theory (Turner, 1982), the similarity attraction hypothesis (Newcomb, 1956; Singh, 1973), the similarity attraction theory (Byrne & Nelson, 1965), the dissimi-larity-repulsion hypotheses (Rosenbaum, 1986), and the social identity theory (Tajfel, 1978) tend to predict empirically negative effects of demographical diversity on workgroup performance.

The second school of thought is formed of theories valuing the "ingredients" diversity potentially may bring to workgroups. The information and decision making theory (Cox et al., 1991; McLeod et al., 1996), the value-in-diversity hypothesis (Ely & Thomas, 2001; Jehn et al., 1999; Watson et al., 1993), the integration and learning perspective (Thomas & Ely, 1996) as well as the cognitive resource diversity theory (Cox & Blake, 1991) predict a more optimistic evaluation of demographically heterogeneous workgroups.

2.1 Working Definition of Workgroup Diversity

Popular literature as well as scholarly literature refer to diversity (e.g., organizational diversity) in various ways (e.g., in Cox, 2001; Williams & O'Reilly, 1998). However, when combining multiple descriptions and definitions mirroring workgroup diversity, I recognized at least three main groups of characteristics to be taken into account: **(a)** readily-detectable or surface characteristics (e.g., age, gender, color of skin, handicaps, language imperfections), **(b)** less readily-detectable characteristics (e.g., sexual orientation, religion, nationality, ethnicity) and **(c)** deep-level characteristics (e.g., competences, aptitudes, skills, experiences, knowledge, education, attitudes). All three groups of characteristics balance constraints between factual and perceived diversity. Referring to the current study, it may be anticipated that factors such as quantity and quality of exposure to diversity, attitude toward diversity, number of spoken languages, focus on human characteristics as well as the social dominance orientation may bridge these constraints by transforming factual diversity (e.g., male versus female, same nationality versus different nationality) into a perception (e.g., a positive perception). Thus, based upon the former argument and gathered evidence from organizational and social psychology literature, it is reasonable to define the components making up workgroup diversity as **the perceptions of each member's readily-detectable, less readily-detectable, and deep-level characteristics according to each member's socialization, experiences, and skills**.

An example reflecting the above definition would be: an individual, who does not have the chance or the interest to cultivate dialogues with diverse others, may perceive factual cultural differences of other group members as a problem more when compared to an individual who is culturally well-rounded. Accordingly, it is anticipated that when workgroup members differ in socialization, experiences, and skills, they will also differ on how they perceive diversity, thereby directly affecting group process and group performance as a whole.

2.2 Relations Among Congruence Aspects (1st School of Thought)

In his work, Scholl (2003) analyzes the interdependency of the five aspects of congruence previously introduced as well as their impact on the increase of knowledge in workgroups. He underlines the positive effect the affective, conative, and normative congruence among workgroup members has on the increase of knowledge in a group. Regarding the cognitive and skill-related aspects of congruence, Scholl suggests a curvilinear effect on workgroup efficiency and increase of knowledge: too much congruence would narrow the spectrum of knowledge and information members could learn from one another; too much non-congruence would cause an opinion conflict. In the current chapter, the five aspects of congruence will be used in a context to illustrate which effects demographical diversity may have on workgroup performance as predicted by the first and the second schools of thought.

The following display of the five aspects of congruence (see Figure 2.1) helps us to visualize the impact that diversity may have on workgroup performance from the perspective of the first school of thought.

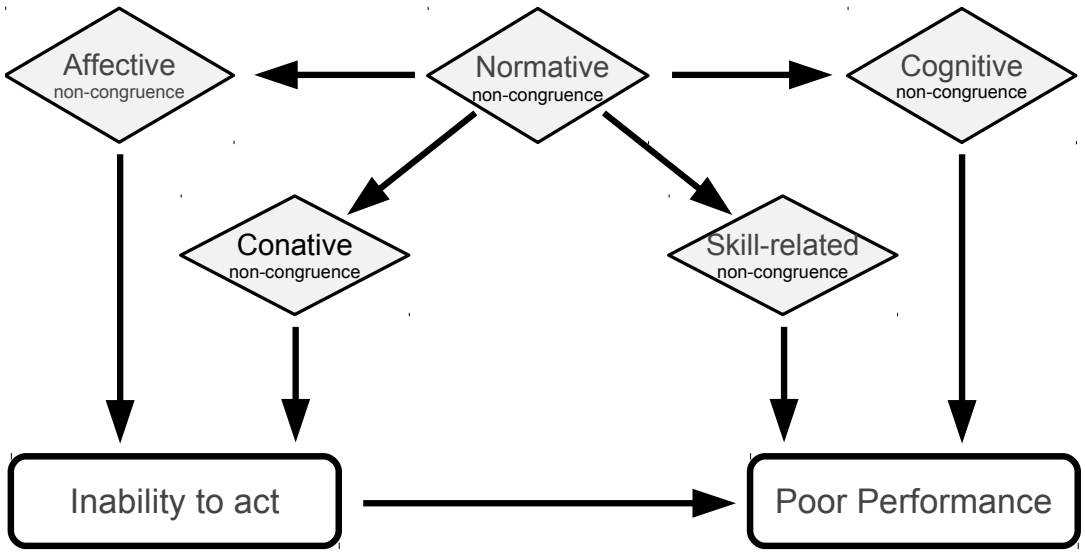

Figure 2.1: The Five Aspects of Congruence and the first school of thought perspective (Note. Modified from Scholl, 1996, p.141)

Because of the fact that members of demographically heterogeneous workgroups have been socialized in different cultures, there is no normative agreement (normative non-congruence) among workgroup members (see Scholl, 2003). A normative non-congruence perpetuates a non-congruence in knowledge (cognitive non-congruence) and in skills (skill-related non-congruence). As predicted by the first school of thought, a normative non-congruence leads to a lack of attraction among diverse group members (affective non-congruence) as well as unwillingness to cooperate (conative non-congruence). When members are perceived as out-groups,

it often results in a decrease of group cohesion, decrease of members' satisfaction, reduced within-group communication, high levels of conflict and high turnover (Chatman et al., 1998; Klimoski & Donahue, 2001; O'Reilly et al., 1989; Pelled et al., 1999; Riordan & Shore, 1997; Thomas, 1999; Tsui et al., 1992; Williams & O'Reilly, 1998). Group members who may have a negative perception of human differences might impede the group's ability to act, which in turn decreases performance.

Referring to the studies led by Triandis (1988) as well as by James (1993), Fiske (1998) explains that the affective non-congruence within heterogeneous workgroups may be due to anger, anxiety, and fear erected by unshared salient factors of culture (e.g., different values). Hogg and Terry (2000) understand the causes of affective non-congruence to be rooted in the tendency for categorizing others according to readily-detectable characteristics (cited in Zee, Atsma, & Brodbeck, 2004).

Social scientists supporting the first school of thought believe that demographically homogeneous groups work well together, because they share similar readily-detectable characteristics, "thereby creating a synergistic effect on performance" (Horwitz, 2005, p.225). Research demonstrated that demographical homogeneity can be beneficial for organizations, because it tends to increase psychological attachment among group members (Tsui et al., 1992), increase communication (Zenger & Lawrence, 1989), and reduce turnover (Wagner et al., 1984).

It is necessary to note that although scholars advocate the first school of thought in order to explain the relationship between group functioning and performance, the specific purpose of this investigation is rather to see whether group members themselves advocate it with regard to how they perceive and deal with human differences.

The model illustrated above is not biased toward workgroups' demographical composition per se, because it depends on each member's ability and willingness to cooperate, which in turn enacts group action. If members do cooperate with one another, then performance will depend upon their cognition and skills (e.g., abilities, competencies, expertise).

2.3 Effects of Diversity on Performance (1^{st} School of Thought)

Studies inspired by the first school of thought have consistently found similar results. Demographically homogeneous workgroups are more efficient than demographically heterogeneous workgroups (Williams & O'Reilly, 1998). It answers maybe why on a global scale gender and demographical diversity is quasi nonexistent in top management teams (Martins et al., 2003).

Groups in which members share similar demographic traits have shown to perform better than their heterogeneous counterparts in terms of activities requiring coordination among group members (Wiersema & Bantel, 1992). As far as the environment is stable, Hambrick and Mason (1984) suggest that demographically homogeneous teams are able to maintain their efficiency. Smith et al. (1994) investigated more than 50 American high-tech firms. After having carefully analyzed two hundred and thirty questionnaires, firm annual reports, financial statements, and other archival information, they discovered that return on investment decreased in companies whose demographically homogeneous managers had diverse working experience. According to Smith et al. (1994), diverse levels of working experience across team members request a greater ability to act when making group decisions. In return, diverse levels of working experience cause conflicts and tensions that are preventing "teams from putting effort into their basic tasks" (Van der Zee et al., 2004, p.283). It has been found that managers who display difficulties coping wièth such tensions view new and different situations as a threat rather than an opportunity (Van der Zee et al., 2004). Bunker and Webb (1992) claimed that these managers notice the complexity of such situations, but demonstrate inflexibility in confronting it. They have the tendency to overlook or even reject new information while intensively using strategies, which worked well in the past, but are often inappropriate in the present.

From a group dynamics perspective, demographically homogeneous groups tend to avoid conflict and enjoy frictionless interaction, which positively increases cohesion and solidarity among members. On one side, cohesion and solidarity may fuel productivity (Mullen & Copper, 1994), and on the other, it creates a platform for *groupthink*. Groupthink occurs "when the members' strivings for unanimity override their motivation to realistically appraise alternative courses of action" (Janis, 1972, p.9), or to put it succinctly, groupthink describes "an organizational situation in which group members mindlessly conform" (Gurin, 1999, p.5). In some instances, employees do have a different perspective to offer, but fear to express it or simply believe that it will not be taken into account. Groupthink happens specifically where members do not explicitly demonstrate openness to out-group perspectives and critics. Any group in which openness to different perspectives or critics is not explicitly encouraged may not be able to reach its potential due to deficient decision-making (Postmes et al., 2001). The simple fact of having individuals who know and like one another may already invite occurrences of groupthink (Jones & Roelofsma, 2000). Whether in a workgroup members are familiar with one another or not, the best scenario which limits groupthink is when members

feel secure enough to challenge others (Aldag & Fuller, 1993) without having to fear to become disliked or even punished.

Richard (2000) argues that when a company is designing, producing, and marketing products (e.g., games, tools) for a specific population, the involvement of demographically homogeneous workgroups is still the most appropriate. Nevertheless, in more and more fields individuals strive **to differ** from their similar peers by buying new, extraordinary, cutting-edge, and even unusual clothes, cars, cellular phones, gadgets, etc. In addition, the pace at which new products need to be developed and produced is accelerating (Salomone, 1995). The ability to launch new products faster, more often, and of superior quality is a clear competitive advantage (Liker et al., 1996), which requires group members to possess well-rounded experiences, high flexibility, and extended knowledge. Such groups have to be open to various perspectives if they wish to keep a positive image and stay on track.

2.4 Relations among Congruence Aspects (2nd School of Thought)

The second school of thought advocates diversity with regard to group performance. Supporters of the second school of thought suggest that individuals with different abilities and experiences, including those varying in age, gender, sexual orientation, religion, cultural and ethnic origin, add more dimensions to problem-solving and decision-making processes because of the variety of perspectives they may potentially bring to the table. The range of skills, information (Bantel & Jackson, 1989; Van Knippenberg et al., 2004), greater knowledge (Hoffman & Maier, 1961) as well as alternative viewpoints, ideas, and methods different members provide increase the value of a group (Cox et al., 1991). Such characteristics are assumed to enhance creativity and facilitate problem solving (Cox, 1993; Cox & Blake, 1991; Hambrick et al., 1996; Hoffman & Maier, 1961; Watson et al., 1993). The classical study led by Laughlin, Branch, and Johnson (1969) revealed that groups which were composed of members with different levels of ability (Low, Medium, and High) outperformed groups with members having the same level of ability (cited in Foo, Wong, & Ong, 2005). Particularly when a group task is complex (i.e., requiring divergent thinking), diversity contributes toward performance (Levine et al., 1998).

The second school of thought strongly suggests the positivity of a cognitive and skill-related non-congruence among diverse group members (normative non-congruence), because it provides them with the necessary tools (e.g., seeing problems from a different angle, from above and below) to be potentially effective. Charlan Nemeth (1986) acknowledges the enriching potential that minority members bring to workgroups. Scholars discovered that the influence of a minority member is beneficial regardless whether the view he or she communicates is right or not (Nemeth, 1986; Schulz-Hardt et al., 2006). Recent research shows that dissent, debate, and competing views positively help in stimulating divergent and creative thoughts (Nemeth, 2002). In addition, the presence of a minority member is valuable when convergent, shallow, and narrow thinking is encouraged by the majority (Nemeth, 1986)

In the same line with Nemeth's argument, German scholars explored the effect of dissent while conducting an experiment mirroring the types of decisions that are being regularly made at a higher management level. After having created one hundred and thirty five triads, Schulz-Hardt and his colleagues (2006) requested each group to make selection among four candidates for a new position. The candidate C was meant to be the best proposition. However, since each group member received different information about the candidates, none would have been able to come to the correct proposition alone. In fact, only fifty nine out of one hundred and thirty five groups made the correct decision. The scholars found that groups which chose the correct answer endured much more disagreements during the decision-making process when compared to other groups. The groups whose members tended to agree maintained information exchange at a more or less superficial level, which was hindering them to uncover the "hidden profiles".

The final conclusion of this experiment demonstrated that the fact of having at least one group member voicing his or her perspective helps to increase information sharing.

Workgroups composed of demographically heterogeneous members tend to focus less on informal communication (Smith et al., 1994). It leads group members to concentrate more on potential solutions (Podsakoff et al., 1997) while being less prone to endure groupthink (Zenger & Lawrence, 1989). Demographical heterogeneity stimulates members' information sharing, flexibility, and thoughtfulness (Nemeth, 1995; Phillips et al., 2004; Triandis et al., 1965). However, if organizations and/or institutions do not audibly praise dissent and debate, creative ideas are not going to surface.

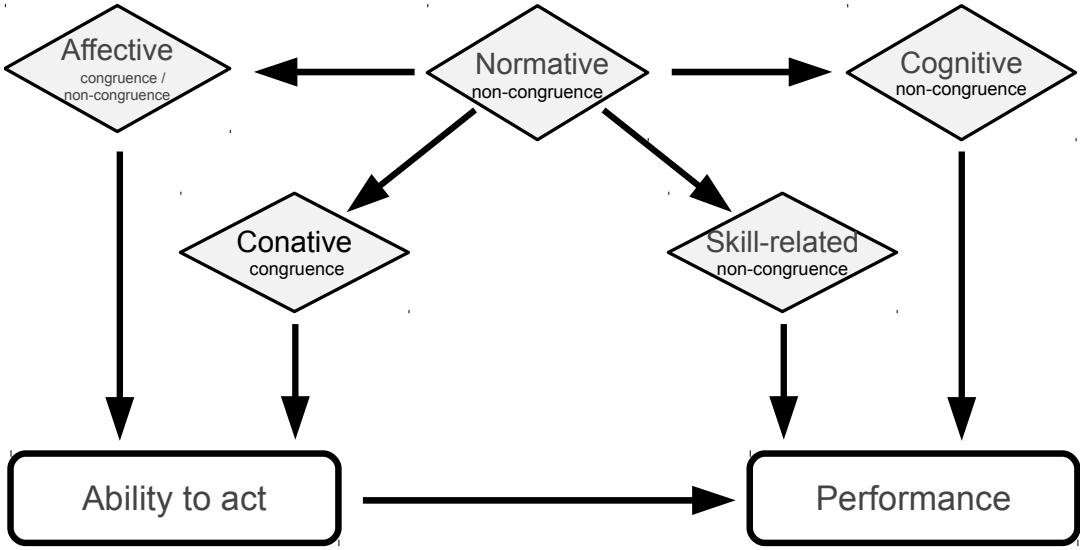

Figure 2.2: The Five Aspects of Congruence and the second school of thought perspective (Note. Modified from Scholl, 1996, p.141)

The potential of demographic diversity predicted by the second school of thought does not "make" members like one another (affective congruence) nor "make" them cooperate effectively (conative congruence). According to Scholl (1996), even though the first school of thought anticipates an affective non-congruence in demographically heterogeneous workgroups, a conative congruence may still take place, thus activating members' ability to act. It is understandable that while entering a new workgroup each member brings with him or her a different identity as well as a different perception of others. In dissimilar workgroups, even if some members may feel attracted toward one another (Schippers et al., 2003), affection may not reach its peak from a first glance. Everyone's ability to fit within a new workgroup is necessary (Rodriguez & Wilson, 2002) in order to achieve task performance. The willingness to cooperate might weigh in this case even more than any emotional attraction (affective congruence). Even if task conflict occurs, group members may still be compelled not to give up until the task is accomplished (Amason, 1996). When group members are willing to cooperate,

emotional attraction may occur as the task evolves with even more intensity than from a first glance attraction. In the worst scenario, there will be no affective attraction among members, but the outcomes may still be above average. In this respect, a conative congruence is the most crucial, especially when a workgroup composed of new and different members receives only a short time to perform a cognitively demanding task (see Figure 2.2).

Whereas the first school of thought considers mainly shared norms and the similarity of identities as the basis for group cohesion, there is evidence that it may stem from elsewhere as well. For instance, Mullen and Copper (1994) suggest that good performance itself strongly contributes toward enhancing group cohesiveness. This demonstrates the dynamic nature of the affective aspect of congruence.

2.5 Effects of Diversity on Performance (2^{nd} School of Thought)

By using the argument proposed by the second school of thought, researchers suggested a positive relationship between demographical heterogeneity and organizational functioning, more specifically group performance (Bantel & Jackson, 1989; Cox, 1993; Cox & Blake, 1991; Elsass & Graves, 1997; Hambrick & Mason, 1984; S. Jackson et al., 1995; McLeod & Lobel, 1992; McLeod et al., 1996; Milliken & Martins, 1996; Watson et al., 1993; Wiersema & Bantel, 1992). Turbulent and uncertain environments have been found to relate group demographical heterogeneity with the ability to perform (Hambrick et al., 1996).

Thomas and Darnton (2006) claim diversity as an important component of economic development. In Silicon Valley for instance, Beckman, Burton and O'Reilly (2007) led a longitudinal investigation about entrepreneurial teams' ability to attract venture capital and to complete an initial public offering. They discovered that entrepreneurial teams' demographical diversity had impressive effects on performance. Similarly, a study from the Institut für Arbeitsmarkt- und Berufsforschung (IAB) revealed that German companies having workgroups composed of highly qualified foreign workers were most successful in product innovation (Niebuhr, 2007). Moreover, an empirical study conducted in a Fortune 500 information processing company unveiled that higher performance outcomes (goal achievement measures and speed of response to customers) came from teams composed with a greater proportion of female service technicians and female managers. Additionally, teams composed with a greater proportion of women (regardless of members' cultural backgrounds) were more cooperative than all other teams (Kochan et al., 2003).

Several other investigators advocate the positive effects emanating from workgroup diversity (e.g., Daily & Steiner, 1998). They studied the performance of workgroups whose members communicated via group decision support systems (GDSS) - a least biased method of group interaction. In fact, GDSS serve as a highly sophisticated electronic technology for the purpose of workgroup communication. It supports group members on various tasks such as idea creation, message exchange, project planning, document preparation, mutual product creation, joint planning, and joint decision-making without having the members to physically meet in the same room or place (McGrath & Hollingshead, 1994). GDSS groups experience higher participation (Lewis, 1982) and more satisfaction with decision procedures (Steeb & Johnson, 1981) than groups meeting face-to-face. In their experimental study, Daily and Steiner (1998) set six demographically homogeneous workgroups (4 to 5 members solely Caucasians) and six demographically heterogeneous workgroups (4 to 5 members with at least two Hispanics and other Caucasians) to brainstorm ideas as a group and then to evaluate those ideas in order to reach a realistic solution. Results showed that multicultural groups produced significantly more ideas (M=13.90, SD=4.99) than culturally homogeneous groups (M=9.72, SD=1.91) / ($F = 9.6$, $p<.05$) when communicating via GDSS. However, as the groups performed the same tasks face-to-face (one month inter-

val between experiments), multicultural groups (M=7.25, SD=3.28) did not score significantly higher than their counterparts (M=6.91, SD=2.22).

With regard to rating others' contribution to decision-making, ethnic minorities tend to receive lower scores from the majority in non-GDSS settings (Daily & Teich, 2001). Nevertheless, low-status individuals (similar to ethnic minorities in diverse workgroups) tend to participate in GDSS settings more than when members meet face-to-face (Dubrovsky et al., 1991).

The studies illustrated above demonstrate how demographical diversity contributes to performance when members do not see one another. Thus, potential causes for lower performances occurring when members see one another must be rooted elsewhere rather than within demographical composition per se - as suggested by the first school of thought.

2.6 Contradictory Findings & Conditional Factors

The effects of diversity on workgroup performance suggested by the first school of thought (e.g., diversity hinders effective communication) and by the second school of thought (e.g., diversity provides more perspectives in decision-making) are still today competing and argued perspectives. Maznevski (1994) illustrates the source of friction occurring between both schools of thought. She suggests that demographical diversity reflects a source of differences, which may generate groups with various types of information needed toward the accomplishment of any task. On one hand, the information may benefit the groups. On the other hand, this information may be difficult for members to understand and accept. Thus, workgroup diversity is often referred to as a "double-edged" sword (Milliken & Martins, 1996; Moreland et al., 1996; Sawyer et al., 2006).

Researchers today do not focus specifically on one school of thought or the other, but rather take into account the implications of both while investigating (e.g., Ely, 2004; Horwitz, 2005) and/or conceiving new research models (e.g., Van Knippenberg et al., 2004). Still, whether demographical diversity enhances or impedes group performance, most often research keeps showing contradictory findings. Whereas Bantel (1994), Elsass and Graves (1997), McLeod et al. (1996), Watson et al. (1993) have found a positive relationship between diversity and group performance, Wiersema and Bantel (1992), Townsend and Scott (2001) have reported that diversity and group performance were negatively related. According to Ancona and Caldwell (1992), Richard, McMillan, Chadwick, and Dwyer (2003), no relationship has been found between diversity and group performance. Furthermore, authors who referred to the first school of thought were convinced that diversity impeded group cohesion (e.g., Crocker & Major, 1989; Harrison et al., 1998; Pelled et al., 1999; Stephan & Stephan, 1985; Triandis et al., 1993). However, studies led by Smith et al. (1994) as well as Webber and Donahue (2001) found no link between the two.

Some real-setting findings showed that employees who worked in demographically homogeneous units were the happiest while being the least productive (Fisher-Ellison et al., 2005). In a study led by Amason and Schweiger (1994), members of workgroups, in which high performance was demonstrated, reported frustration and dissatisfaction due to workgroups' demographical composition. Yet, it was found within several studies that white males tend to devaluate their experience working in demographically heterogeneous groups when compared to women and minorities (e.g., Baugh & Graen, 1997; Hofstede, 2001; Oyserman & Swim, 2001; Tsui et al., 1992). Other authors have reported that for members of dominant groups, interaction with diverse others may be challenging and even generate a state of physiological threat (Blascovich et al., 2001).

The above findings also seem to beg for new research, whether and/or how satisfaction relates to performance and group demographical composition:

Prediction (1) [EXPERIM]: [1] When compared to the members of a demograph-

[1] Two types of predictions as well as research questions are addressed. The first type [**EXPLOR**] refers

ically homogeneous workgroup, the members of a demographically heterogeneous workgroup will be less satisfied.

Research Question (2) [EXPERIM]: Does members' satisfaction relate to workgroups' performance?

The illustrated inconsistencies in empirical findings hint that the relationship between diversity and performance must involve conditional factors that are independent from demographical workgroup composition. Any information (e.g., olfactics, paralanguage, etc.) is proceeded by each member as he or she steps into a new workgroup. Each member may look at or overlook others' appearance and thus appraisal may vary. Depending on the nature of such perceptions and on how they are attitudinally mediated, the intensity with which task-related information will be discussed, debated, and negotiated may vary as well.

From a psychological and social perspective, workgroup members will first perceive their counterparts and then either consciously or unconsciously decide whether and with which degree of intensity they are going to cooperate with them. From a task-related perspective, workgroup members will make similar decisions.

Shortly after group interaction starts, workgroup members will need to seek information from their colleagues in order to increase the plausibility of their final decisions (Van Swol et al., 2003). At this point, dissent may occur. It is understandable why experiments to date reflect such great differences with regard to workgroup performance. We now know that dissent is necessary to make good decisions (see Nemeth, 1986; Schulz-Hardt et al., 2006). We also know that according to the second school of thought dissent is more likely to occur in workgroups composed of demographically heterogeneous members. As illustrated in previous sections, the first school of thought suggests that group members tend to feel less comfortable to agree with colleagues having different norms from their own. If dissent is caused by someone who has a different socialization, not all potential solutions may be taken into account. The second school of thought suggests intergroup bias as being one of the factors impeding workgroups from achieving their potential (Ely & Thomas, 2001; Polzer et al., 2002). The feeling of being perceived as less valuable due to readily-detectable characteristics impedes dedication from targeted members. A group member who perceives not being liked by others may choose to withhold important information (Keltner et al., 2003). When a member feels that his or her voice has been ignored, not only performance will suffer but also group satisfaction in general will decline (Nixon, 1979). Driskell, Radtke and Salas (2003) explain what repercussion intergroup bias may have on workgroup performance: "to the extent that status differentials within the group are based on cultural stereotypes (such as nationality and/or gender) this may result in loss of resources to the group and undesirable barriers to equal participation for females

to research questions and predictions based upon data collected in the explorative study. They are meant to bring an understanding of how self-reported human characteristics and/or competences (e.g., level of exposure to diversity) relate to attitudes. The second type [**EXPERIM**] refers to research questions and predictions based upon data from the experimental study. They are supposed to test the effect of self-reported measures (e.g., attitude) and perceptive measures (e.g., cooperation, satisfaction) on factual measures (e.g., workgroup performance).

and ethnic minorities" (p. 308). In this regard, a positive attitude toward human differences should mediate such effects and in turn increase performance. Fisher-Ellison et al. (2005) surveyed over eight years small businesses spread across the globe. Their analysis revealed that members who reported that demographical heterogeneity was accepted within the group worked more cooperatively with one another.

While trying to understand the effect of diversity on workgroup performance, it seems necessary to inquire into the relation between the perception of colleagues' cooperation and the group performance:

Prediction (3) [EXPERIM]: With regard to demographically heterogeneous workgroups, members' positive perception of others' cooperation will have a positive effect on workgroup performance and group potential achievement.

The first school of thought focuses on the importance to feel well among colleagues. For the second school of thought, the value of different perspectives is more important than actual relationships among group members. This suggests that in order to cooperate members may not need to have affection for one another, but rather basic respect.

As the workforce is gaining in heterogeneity, the economy offers less and less time to come up with results. Therefore, the willingness and ability to cooperate effectively in novel situations seem to be very desirable as the organizational and economical requirements of the 21^{st} century.

Whether homogeneous or heterogeneous workgroups are able to outperform one another in cautious laboratory studies, the extent to which members of both types of groups cooperate with one another should be addressed. Workgroups' outcomes may be comparable as far as the level of cooperation among members is similar. Homogeneous workgroups having achieved better results may be considered as better only if their heterogeneous counterparts cooperated with the same intensity, since intergroup bias and lack of cooperation might as a result lead workgroups not to achieve their potential (e.g., Baugh & Graen, 1997; Kirchmeyer, 1995).

Instead of focusing specifically on the effect of group composition, the merits of new members who make the group diverse as well as the merits of those who deal with diversity should be addressed (Ely & Thomas, 2001). In this regard, participants' interest for human differences (i.e., attitude toward diversity) should be assessed prior to group task interaction. Additionally, the perception of how members cooperated should be systematically questioned upon task accomplishment. Such research procedures should suggest whether members' attitude toward diversity interferes with cooperation intensity and as a result indirectly relates to performance.

Scholars argue that workgroups' potential may be low independently from workgroup composition. For instance, Nemeth (1986) discovered that heterogeneous groups were more creative in problem solving than homogeneous groups only when individuals' abilities were controlled. Further, Triandis and his colleagues confirmed the fact that the effect of demographical heterogeneity on performance is conditional (cited in Cox & Beale, 1997). Their experiment revealed that de-

mographically heterogeneous workgroups in which members had some awareness about the existence and implications of human differences scored about six times higher on a problem-solving task than demographically homogeneous workgroups. However, demographically heterogeneous workgroups composed of members who did not possess such awareness scored lower than demographically homogeneous workgroups (cited in Cox & Beale, 1997). Such experiment adds support to the necessity to gather individuals' measures (e.g., attitude toward diversity, levels of exposure toward diversity) prior to comparing performance across different workgroups (i.e., demographically homogeneous and heterogeneous workgroups).

Additionally, social scientists suggest that the environment in which workgroups perform affects their performance. In organizations where cultural diversity is cultivated, workgroup members have a better understanding for demographical diversity resulting in higher outcomes, when compared to organizations with low percentage of demographically diverse members (Martins et al., 2003). More specifically, Richard et al. (2003) identified that the degree of innovativeness fostered by an organization was a factor modifying the impact of diversity on group performance. They discovered that demographically heterogeneous workgroups achieved higher performance in banks using an innovation strategy, whereas in banks which did not support innovativeness, such workgroups performed poorly.

Factors such as support for diversity, which may have an impact on cooperation and performance in diverse workgroups, vary in intensity and in content across settings. Such factors are a result rather than a predictor, because it is up to each individual to make the environment friendly. The hiring of culturally well-rounded individuals seems to be the first step to obtain supportive settings. Thus, the investigation of individuals' ability to cooperate with diverse others may contribute to a better understanding of how to achieve diversity-friendly environments.

Performance across workgroups differs depending on the spectrum of information available to the groups. The origin of the group members may not make the difference, but rather their ability to retrieve information from others and to integrate it into a final solution. As a never ending spiral, the less information is made available, the more the group will need to rely on each member's actual knowledge to find a good answer. This in turn may add friction and strife while debating the best answer. As the number of viewpoints and sources of information grows larger, decision-making procedures grow more complex (Schaller, 1994).

Nonaka and Takeuchi (1995) suggest that demographically heterogeneous workgroups may be successful in their interaction as far as group members share at least some similarities in perspectives. Thus, if each member has the tendency not to categorize others according to readily-detectable characteristics, the probability for demographically heterogeneous workgroups to reach the best of their potential will increase.

Furthermore, complex group interaction caused by task complexity may affect members' ability to effectively cooperate with one another. Therefore, if a task is very complex and the group possesses the knowledge to solve a problem, it is then in the hands of each individual to demonstrate his or her communication ability, no matter where members are from. In short, demographical aspects may have

an effect on performance, but it depends on how each member interprets human differences (Chatman & O'Reilly, 2004). The same authors strongly suggest that factors which may affect people's interpretation of differences need to be further investigated.

According to the second school of thought, a group member having a different cultural background may contribute to curbing groupthink as well as add novel potential solutions to a problem. Nevertheless, group composition itself does not cause performance (Cox, 2001). Series of experiments led within the headquarters of a multinational company in Bangkok support that either positive or negative effects of diversity on workgroups are coupled with conditional factors (Earley & Mosakowski, 2000). Workgroups composed of four members - each having different nationality - performed just as well as workgroups composed of one single nationality. Both authors observed that in groups, in which each member possessed a different cultural background, a new set of rules was created "from scratch" enabling the groups to develop a common work-style. A common work-style helps members to merge their talents with less friction. Further, the authors explained that such effect does not seem to happen in workgroups formed of two members of one nationality and two members of a different nationality due to frictions between two already existing work-styles. From a different standpoint, Earley and Gibson (2002) suggest that when each group member is from a different region, a "hybrid culture" develops among members, which creates new patterns of group interaction and shared understandings. This may hint us toward the following:

Prediction (4) [EXPERIM]: Perception of differences in colleagues' work-style will negatively affect workgroup performance and workgroup potential achievement.

2.7 Solving Complex Problems in Complex Environments

"...only through diversity of opinion is there, in the existing state of human intellect, a chance of fair play to all sides of the truth."

John Stuart Mill

A study led by Phillips et al. (2004) presented an interesting finding on how group composition may affect information exchange needed to accomplish a task. The study participants were placed into triads where two of them were familiar with each other and the third one was from outside. Socially tied members were provided with similar information and the "stranger" with a different piece of information. The researchers discovered that in such constellation workgroups were able to solve problems better than when the different piece of information was provided to one of the socially tied members. The authors explained that when two familiar members possessed different information, they seemed to feel more uncertain than when possessing similar information. The researchers further argued that feeling uncertain made the socially tied members fail to support each other. They were more comfortable to consider the marginal piece of information when sourcing from the "stranger". The same authors have risen the question whether such effects may occur when other types of group composition are in play. For instance, when the third person differs from the other group members not in terms of social ties but in terms of gender or cultural background.

In the current study, it will be examined how the members of demographically homogeneous workgroups share different information needed to accomplish a task, when compared to the members of demographically heterogeneous workgroups:

Research Question (5) [EXPERIM]: Does information diversity benefit more demographically heterogeneous workgroups or demographically homogeneous workgroups?

2.8 Examination of Cooperation Facilitators

"Global diversity is the recognition and development of skills to deal with differences on both international and domestic fronts"

Dr. Milton Bennett

Many organizations today have requests for different types of tasks, different types of groups, and therefore staff them differently (demographically homogeneous and/or heterogeneous workgroups) across time. Depending on organizational needs and demands (e.g., work on a technical problem and/or develop a new method of production) employees may temporarily have to navigate among groups that differ in demographical composition. In such settings, managers often determine and plan which subordinates will be set to which group tasks or projects (Zenger et al., 1994). Thus, employees may not always know whom they are going to work with. Potentially, employees will be asked to take part in a project abroad. Throughout an engineer's career, work often carries him or her abroad for weeks at a time. Little may be known about the exact nature of the task (e.g., economical development, natural catastrophe recovery). The other group members tasked to problem solve with the engineer may be unknown in skills, origin, and ability until the moment the engineer is introduced.

The following part will present some of the factors, which according to literature, should foster willingness and ability to cooperate in unknown situations with unknown colleagues. The following sections will attempt to review scientific literature, and seek factors which may be referred as valid prerequisites for cooperation with diverse others.

first, I intend to illustrate how **(1)** focus on human deep-level characteristics helps group members enter a new workgroup. Then, in order for new members to get along with the least relationship friction as possible, I will explain how **(2)** quantitative and qualitative exposure to diversity and **(3)** foreign language acquisition shorten workgroups' "getting along period". Finally, I intend to illustrate how positive appraisal of human differing either **(4)** culturally or **(5)** status like may be needed to maximize fruitful workgroup interactions.

2.8.1 Focus on Deep-Level Characteristics

"who had a narrow nose, was identified as Tutsi"

Alison DesForges, HRW, New-York

There are several reasons why unacquainted humans with various cultural backgrounds are preferred (e.g., in Verkuyten & Steenhuis, 2005), disliked (e.g., in Killen et al., 2004), excluded (e.g., in Killen et al., 2002; Perry, 2001) or even perceived as enemies (e.g., in B. Pörksen, 2000). According to Brewer and Kramer (1985) as well as Fiske and Taylor (1991), contact with foreign citizens helps group members "to use individuating information rather than racioethnic category stereotypes in their assessments of individuals who are racioethnically different from themselves" (cited in Martins et al., 2003, p.81). A considerable number of scholars underlined a shift from individuals' reasoning for colleague preference based upon readily-detectable or surface characteristics to preference based upon more complex deep-level characteristics, specifically when individuals have frequent and extensive contact with diversity (Austin, 1997; Baugh & Graen, 1997; Bhadury, Mighty, & Damar, 2000; Brewer & Brown, 1998; Elsass & Graves, 1997; Larkey 1996; Martins et al., 2003; Milliken & Martins, 1996; Riordan, 2000; Wiersema & Bird 1993).

The ability to recognize that an individual possesses various deep-level characteristics and is not to be classified on the basis of primarily demographic differences (e.g., nationality, gender) reflects the ability of individualizing rather than categorizing humans. The focus on the human abilities, values, and attitudes - instead of appearances or sound - prevents instances of depersonalization, and therefore contributes toward a more accurate, intelligent as well as more rational perception of differences. The ability to value human differences based upon deep-level characteristics may alleviate group process as well as enhance usage of everyone's resources.

Flynn and Chatman (2002) argue that when members lack information about their colleagues' deep-level characteristics, they "may rely on accessible or visible characteristics (e.g., race, gender, age) to serve as the basis of their categorizations" (p.4). Workgroups whose members refer to their colleagues' demographic characteristics trigger power and dominance expectations (Berger et al., 1972). Demographic or readily-detectable characteristics are all characteristics that are easily noticeable (e.g., color of skin, language accent, etc.). These characteristics showed in several studies to have an impact on individuals' attitudes, which in turn affects group work interaction. After being negatively stereotyped, minority members are often cast in the position of followers. Group members with privileged demographics are likely to demonstrate discounting behaviors, especially when they are in a majority position (Keltner et al., 2003). According to Townsend and Scott (2001), in traditional workgroup settings dominated by privileged locals, some members' opinions and suggestions "are heard more easily" (cited in Grimes, 2002, p.403).

On the other side, in workgroups where demographic factors are disregarded, individuals try to get an understanding of one another's knowledge, skills and abilities (KSAs), which helps them to develop a reasonable transactive memory (Brauner, 2002; Moreland, 1999). Everyone's contribution is taken into account. Group members gain status and influence in accordance with the demonstrated KSAs (Hollander & Julian, 1970; Scholl, 2003). As a consequence, respect and attraction are not contingent on gender and/or nationality but rather on deep-level characteristics such as hard and soft skills.

Considerable group process variations may be observed in regard to the way workgroups are facing task-oriented disagreements. The latter generate situations, in which groups are subjects to frictions. Lack of attraction toward demographically heterogeneous group members as well as refusal to cooperate with them shrink the possibilities for resolution possibly causing the group to break apart. In contrast, a conative congruence among diverse group members enhances the chances for argumentation and debate to take place. The willingness to cooperate, which according to Scholl (1996) is the most important aspect of congruence, should compel group members to stay in the group until the problem is solved.

Positive or negative appraisal of colleagues based on readily-detectable characteristics poorly matches their actual abilities and/or competencies. However, the main premise of the first school of thought stresses that mostly human readily-detectable characteristics are responsible for hindering group performance. On the other side, if group members have a tendency to focus on deep-level characteristics, human differences are perceived as a source of knowledge being potentially the key to facilitate group process.

In order to understand this phenomenon, the current study intends to figure out whether participants take into account readily-detectable characteristics or deep-level characteristics in their perception of others. Different criteria for preferences may impact workgroup performance in different ways and should be further investigated. In this regard, we may extrapolate the premises made by both schools of thought on how people choose colleagues. It may be possible to unveil the nature of colleague preference by considering whether it is based on readily-detectable characteristics (assumptions reflected by the first school of thought) or rather on deep-level characteristics (arguments proposed by the second school of thought). Gathered data will be evaluated in order to test the following prediction:

Prediction (6) [EXPLOR]: Participants who tend to focus on human deep-level characteristics will have a better attitude toward diversity than participants focusing on human readily-detectable characteristics.

Taking into account the explorative nature of my survey study, it is also my attempt to scrutinize why some individuals more than others tend to focus on human deep-level characteristics:

Research Question (7) [EXPLOR]: What are the traits characterizing individuals who view others in terms of deep-level information?

Deep-level diversity refers to differences regarding team members' psychological characteristics including cognitive abilities, knowledge, skills as well as values, attitudes, and non-performance oriented traits (Harrison et al., 2002). These characteristics need time to evolve in workgroup settings, because group members need time to cumulate clues about one another, meeting after meeting (Harrison et al., 2002). According to Harrison et al (1998), when a group works for a long period of time, the effects of members' readily-detectable characteristics weaken and the focus on their deep-level characteristics strengthens. One should reflect beyond the suggestion offered by Harrison and his colleagues, although their argument is correct. First, it is unclear whether diversity keeps its potentially positive effects on performance longitudinally (Horwitz, 2005; Richard et al., 2007). Actual organizations, which at some point had some diversity, tend to homogenize themselves again across time (Schneider et al., 1996). Second, clients are more and more demanding and companies have to adapt in order to survive. That is, outcomes expected by clients require group members to feel comfortable among diverse others quite rapidly, at best already during the first meeting. In this regard, organizations need individuals able to demonstrate solid prerequisites to fit into diverse workgroups quickly.

In real settings, group members will not have the privilege to choose colleagues they would prefer to work with. Nonetheless, as a human, anyone has personal preferences. Letting members create their own group according to their personal preferences may affect group process and outcomes in different ways. Beckman et al. (2007) discovered in a recent study that demographically diverse workgroup members of high performing high-tech firms had freely chosen their partners. While the researchers agreed that diversity generally has deleterious effects on group process, they had to report that their suggestions did not apply to the investigated high-tech firms. The researchers claimed that the fact of being "free to choose" might have alleviated group-process-related problems as well as curbed process deficiencies which demographical group composition may activate. In this case, group members' diverse knowledge (i.e., information diversity) could have contributed toward performance (Burt, 1992). In essence, research suggests that the voluntary nature of participation increases the chance for cooperation even in demographically heterogeneous workgroups. Beckman and his colleagues underline the idea that team self-selection may reflect the composite situation in which team members who like one another are culturally very diverse. Such instance perfectly illustrates a scenario where the second school of thought predicts above average workgroup outcomes.

In contrast to Beckman and his colleagues (2007), Jackson (1992) suggests that when employees have the opportunity to choose whom they prefer to work with, groups will tend to reflect demographical homogeneity. Similar findings were discovered among chosen mentees in White executive teams (Thomas & Gabarro, 1999). Although the impact of team self-selection on performance in international workgroups (e.g., high-tech firms) should be further investigated, most organizations rarely offer their members the opportunity to choose whom they are going to work with.

In a seminar work (Sciboz, 2001), I tried to find out whether managers from various fields of work use formal or informal strategies when staffing their workgroups (i.e., hiring someone based on skills, aptitudes or rather on attitudes, manners, etc.). One of the interviewees, a deputy chief of a university police, mentioned being aware that each of his officers possesses specific skills and therefore should be set to tasks accordingly (e.g., coordinating homecoming patrol, investigating about a robbery, handling a case of family violence, etc.). According to the deputy chief, "sometimes, the best teams would be created by pulling together members working in different shifts." Since there are day and night shift officers, the right members for the right task are rarely pulled together. Moreover, the deputy chief shared that the same problem may occur within the same shift, "because one [officer] may have already been on his or her way home and the other is taking care of an emergency call." Discussions with other managers revealed that the staffing of workgroups occurs according to members' availability rather than exclusively their skills.

Although in real settings employees are set together by managers according to specific criteria and conditions (e.g., task requirement, availability), they still have personal preferences. While being designated to join a workgroup according to some criteria, any member might have chosen his or her colleagues based on different criteria. Let us imagine for a minute that employees' expectations extensively deviate from the colleagues they have been assigned with. This may have repercussions on group performance, because the more personal expectations deviate from the real situation, the more cognitive flexibility is required. Thus, members' focus on deep-level characteristics should facilitate group process despite group composition.

The extent to which individuals' concentration on either deep-level or surface characteristics may affect their problem-solving ability is illustrated by the following examples. For instance, Holloway and Wolleat (1980) examined how the level of clinical experience affects counseling psychologists' impression about clients. The scholars discovered that psychologists' tendency to focus on clients' deep-level characteristics - rather than the amount of clinical experience per se - was related to the overall quality and clarity of clinical descriptions regarding clients' behaviors. Holloway and Wolleat concluded that counselors who were specifically looking for deep-level types of information prior to describing their impressions (not based on stereotypes) thought with more complexity than those who tended to perseverate on a single mode of inquiry (i.e., having an easy access to stereotypes). In a similar investigation, Spengler and Strohmer (1994) discovered that counselors having lower cognitive complexity were more prone to diagnostic overshadowing (i.e., failing to notice coexisting mental disorders). Both studies highlight the difference between individuals utilizing cognitive strength in order to make sense of their environment and those who in any situation tend to act considering only "one side of the dice."

When a workgroup is confronted with a problem to solve, members' tendency to focus on either readily-detectable or deep-level characteristics certainly affects decision-making procedures. The way of how viewing colleagues in terms of ei-

ther readily-detectable or deep-level characteristics may impact decision-making at group level has not been considered in the literature. Though, according to Pat-Anthony Federico (1984), cognitive styles (e.g., tolerance for ambiguity, thinking flexibility) refer to the dominant modes of information processing people typically employ while perceiving, learning, and solving problems. The way people perceive human differences (e.g., according to deep-level characteristics) seems to relate to the way they see problems and to the methods they use to solve them. Being able to see others' talents - without depersonalizing and categorizing them into what is believed to be true - may help to handle problems with more advanced and cautious techniques. According to Streufert and Streufert (1978), acquired cognitive complexity enhances someone's ability to make multiple and fine-grained distinctions and connections between concepts (complex tasks). Individuals with such an ability are equipped with the necessary skills to adapt while encountering new and challenging work experiences (complex environments) (Bader et al., 2002). An example for rigid mode of information processing would be someone who can tell with certainty individuals from which nationalities are hard workers, machos, etc. Statements like these (implying depersonalization, viewing others in terms of readily-detectable characteristics) provide us with hard data on how this same person may affirm other things with such a great certainty (Potential causes for human depersonalization are illustrated in Pratto, Sidanius, & Levin, 2006).

Conway, Schaller, Tweed and Hallet (2001) offer an interesting example of how acquired cognitive complexity may be noticed in people's comments about others. Individuals who acquired less cognitive complexity (implying their tendency to focus on surface characteristics) see other people or populations in terms of within-group homogeneity (e.g., "Germans are humorless"), while those who acquired more cognitive complexity connote more within-group heterogeneity (e.g., "Some Germans are humorless, and others have wonderfully wacky senses of humor") (p.229).

As introduced earlier, when a member is categorized according to his or her surface characteristics, hostility and animosity may arise within a workgroup (Pelled, 1996). If group interaction is disrupted by members who have harbored racial biases, performance may be strongly impeded. In series of experiments, it was discovered that participants who disclosed negative feelings toward different others tend to add efforts to control themselves when interacting with an outsider (Richeson et al., 2003). After a short interaction with a confederate of an ethnic minority, participants have been asked to perform a task. Those with negative feelings toward diversity tended to achieve lower scores on the requested task, presumably because maximum concentration was hindered (Richeson & Shelton, 2003). During workgroup interaction, members who may not feel comfortable working with diverse others will according to Richeson and Trawalter (2005) increase self-regulating energy, which takes away task-relevant concentration. Participants' energy is used to monitor their thoughts or statements about what they believe to be true (e.g., stereotypical judgments) instead of being fully focused on the task at hand. I shall in this regard predict the relationship between participants' criteria for colleague preference and group performance:

Prediction (8) [EXPERIM]: Workgroups whose members on average focus more on human deep-level characteristics will make better decisions than workgroups whose members focus more on human readily-detectable characteristics.

2.8.2 Quantitative & Qualitative Exposure to Diversity

"... unless individuals are able to retreat to a familiar world, they will likely undergo cognitive growth."

(Paraphrased in Ruble, 1994)

Does exposure to diversity stimulate someone's willingness and ability to avidly cooperate within a new workgroup environment? Scholars have demonstrated that regular interactions with people having various backgrounds increase someone's flexibility to quickly adapt to new situations (e.g., Berry et al., 1992). Hence, as easy it may seem the following paragraph argues that within the global village quantitative as well as qualitative exposure to diversity does not naturally happen. Currently - although laws permit it - only two percent of working age EU citizens live and work in another member state (Zaiceva & Zimmermann, 2008).

There is no need to work in a foreign country to gain an extensive exposure to diversity. Although statistics describe well how our cities grow diverse, only a small part of our workforce has a natural contact to it. According to Ofori (2003), daily interactions among people having different nationalities often take place within small groups on construction sites. As a matter of fact, there are more possibilities for blue collars to work in demographically heterogeneous environments than for white collars (Martins et al., 2003). In Europe, the lower a sector is paid, the greater the chances are to find diversity. Furthermore, the less privileged a neighborhood is, the more people diverge in cultural backgrounds. In the United States, years after the new century started, researchers still find evidence of a so called "white flight" (e.g., Andrews, 2002; Fairlie & Resch, 2002; Renzulli & Evans, 2005; Saporito, 2003). This phenomenon applies to areas where population of minority schoolchildren is increasing and white parents take their kids away from public schools to send them to a private school. In their school evaluation in Florida, Smith and Meier (1995) discovered that religious and racial composition of a school had more weight in parents' criteria for choosing a school than school quality. In the last few years, studies have been conducted in Austria (Fessel-GfK-Umfrage, Gallup, Marketing Data) with the purpose to sense whether the folk would like to adopt integrated schools (Schule-bunt.at, 2007). The investigators came up with similar results. In fact, about three fourths of the population reported being against integrated schools. It is also necessary to notice that the percentage of people who showed support for integrated schools decreased from 43% in 2005 to about 25.9% in 2007 (average results from studies led by Marketing Data and Gallup). Research on such options regarding integrated schools in other countries was not uncovered in the course of this study.

One reason why diversity may be unwelcome is illustrated in the work of Stephan and Stephan (1985). The authors argue that potential interaction with diverse people is bounded to negative expectations. They specify four types of negative consequences people fear. First, it is fear of the consequence interaction may have on self-concept. Second, it is fear of negative behavioral consequences. Third, it

is fear of being negatively evaluated by the diverse conversational partner. And lastly, it is fear to be negatively evaluated by the in-group members.

While the first school of thought claims that demographic similarity brings and keeps people together, Moreland and Beach (1992) suggest that repeated exposure to diversity is associated with an increase of attraction to it. Thus, as exposure to diverse others becomes regular and time spent together increases, social integration is more likely to occur, even in integrated schools. Kids are going to be accustomed to differences and perceive them as normal or even as valuable.

Already the father of Social Psychology and finder of the famous "contact hypothesis" (1954), Gorden Allport, discovered that under specific conditions contacts with people having different cultural backgrounds reduce negative feelings toward diversity. Even under normal conditions (e.g., at school or at work), Pettigrew and Tropp (2000) found the same effect. Recently, after the revision of hundreds of studies, similar findings have been confirmed again (Pettigrew & Tropp, 2006). Data gathered from 285'000 American students revealed that those who had been exposed to diversity were more likely to be involved in active and collaborative learning (Kuh, 2003). Gleason (1969) advised that close acquaintance with another culture helps to acquire a sense of worldmindedness. Queener (1949) advocated socialization in an international environment in terms of global awareness. Scholars have demonstrated positive evidence in favor of regular exposure to diversity across time and populations. Thus, it is expected that:

Prediction (9) [EXPLOR]: Participants reporting a higher level of diversity exposure will demonstrate a better attitude toward diversity than participants reporting less exposure.

Why do scholars suggest that exposure to people having a different cultural background increases environmental flexibility? Gurin (1999) argues that contacts with diversity affect the content of what is being learned, providing individuals with a dimension that would not exist by learning in a demographically homogeneous environment. After having longitudinally surveyed college students' behavior (11 universities spread across 9 different states) - once after their freshman year (N=2137) and again at the end of their sophomore year (N=1200) - Terenzini, Springer, Pascarella, and Nora (1995) revealed that students who had interracial friendships reported more frequent conversations about complex issues such as economy, peace, human right equality, and justice. In other words, the fact of having interracial friendships fosters the understanding of complex problems. On the other side, years of learning in a familiar environment (demographically homogeneous) contribute to the acquirement of thinking automaticity, which may be characterized in terms of "automatic pilot mode." Other authors call it "cognitive misers" due to thinking patterns which are based on the same "thinking scripts" (Taylor & Fiske, 1978). According to Barth (1997), people who acquired automatic thinking are prone to categorizing as well as stereotyping. Thus, even educated individuals (e.g., politicians, economists, etc.) who claim to endure effortful thinking are not immunized against enacting learned routines (Langer, 1978, cited in Gurin, 1999).

Gurin (1999) explains that the ground for developing cognitive complexity is to be found in situations in which no "thinking scripts" are available (e.g., attending a camp with individuals speaking a different language, learning for finals with fellows from different countries) and conflicting information requires higher-order cognitive processing. Such novel situations foster stimulation of the prefrontal cortex which is responsible for encoding social information and planning complex cognitive behaviors.

The empirical literature supports the exposure to diversity as an influential factor in cognitive development. Revealing studies lead by Gurin, Dey, Hurtado and Gurin (2002) show that having frequent interactions with diverse others increases cognitive complexity. A few years earlier, Pascarella, Edison, Nora, Hagedorn and Terenzini (1996) discovered that time spent in homogeneous environments (e.g., sororities, fraternities) was negatively associated with cognitive complexity. In a different investigation, Gurin (1999) demonstrated that exposure to diversity enables individuals "to deepen their own thinking about themselves and about others" (p.2). With regard to group problem-solving capabilities, Hurtado, Engberg, Ponjuan and Landreman (2002) discovered a strong relationship between the amount of interaction with diverse others and the ability to see multiple perspectives. After evaluation of the responses to a survey measuring participants' pluralistic orientation, cultural awareness, social-action-taking and attributional complexity, Engberg, Meader, and Hurtado (2003) noticed a significant effect of regular interaction with diverse peers on thinking complexity and attitudes. This remarkable study was based on a sample of 13'307 students from 10 different American universities. Taking into account suggestions and empirical evidence presented in this section, it is intended to evaluate the experimental data of the current study with respect to the following prediction:

Prediction (10) [EXPERIM]: Workgroups averaging higher levels of diversity exposure will reach better decisions than workgroups averaging lower levels of diversity exposure.

2.8.3 Foreign Language Acquisition

" 'You should learn MY language' ...that's not a concept"

Dr. Christian Bode, DAAD

" This is going to be a small world after the war [...] and if we do not know the other man's language, nor understand his background, things are going to be in a sorry state"

Dr. Arthur Cutts Willard, President of the University of Illinois, 1934 - 1946

Even recent literature on workgroup diversity (e.g., Mannix & Neale, 2005) does not explicitly define language (i.e., spoken language) as an aspect of diversity, although it belongs to readily-detectable human characteristics (e.g., accent, intonation, articulation, pitch, fluency). For the police in many countries, not only criteria such as age, height, skin color, eye color or hair color, but also language quality (e.g., the suspect spoke fluently German with hardly any accent; the suspect spoke with a thick Latin American accent) is used to build the profile of crime suspects (see Leonard, 2006, for a review on forensic linguistics). It is often via communication that power, privilege, and influence are conveyed and perpetuated (Crawford, 1995; Heritage, 1984; Popp et al., 2003; Potter & Wetherell, 1987).

Public debate on this issue has extended into the world wide web where one online blog (tigergrowl.wordpress.com/tag/language/) described implications of languages in the future of international workgroups:

> Studying language can be very rewarding. It not only provides us with a skill but teaches us about culture and psychology, our own as well as other peoples. The British are traditionally poor linguists, perhaps because the status of our language as a de facto world language makes us lazy and because we are an arrogant race: we always like to be on top and we therefore prefer to patronize foreigners speaking poor English than to attempt to speak their language and be patronized in our turn. (Speakez-vous Englais? SilverTiger, January 30th, 2007)

In short, the way spoken languages are perceived by group members may generate positive or negative attitudes toward certain colleagues:

> If a subordinate social group holds a negative view about speakers in a dominant social class, there is much less social consequence than if a dominant group holds prejudices against a group with less social power. The latter situation may influence public policy, educational decisions, and contribute to intolerance of others. (Behrens & Neeman, 2004, p.467)

Language as an aspect of diversity may affect diverse workgroups in at least two different ways. Seen as a skill (deep-level characteristic), language serves as a communication bridge among members of any multinational team or workgroup enabling effective cooperation. Seen as a bias (readily-detectable characteristic), because of being "broken" or glottal (Behrens & Neeman, 2004), language may impede group members to focus on the task, and thus potential sources of knowledge may be disregarded.

In the global economy, someone who is motivated to learn foreign languages may be possibly discriminated. Within an international workgroup, a new member may thus encounter double bind situations (e.g., Popp et al., 2003). He or she may be disliked either for speaking other members' native language with mistakes, or simply for not adopting the language of the majority. Not adopting the language of the natives is often perceived as a sign of no respect or poor integration, but speaking it with less proficiency than a native speaker may be an excuse for lowering the salary or simply not hiring. Group members may not only encounter such instances abroad, but also within their own countries of origin (e.g., Belgium, Canada, Estonia, Switzerland, Ukraine, etc.). According to Kecskes and Papp (2000), when acquiring a foreign language, the individual will never achieve the proficiency of a native speaker.

It should be pointed out that while defining characteristics of high performing groups, language is most often not included as variable. Nevertheless, "often one of the main problems faced in global teams is that one or more of the team members will need to use a foreign language" (Chen et al., 2006, p.679). Less than a handful of researchers explicitly mentioned foreign language as a key competence for effectively functioning within diverse environments. For instance, Lambert (1984) suggested the following components of global competence:

1. world knowledge
2. **foreign language proficiency**
3. cultural empathy
4. approval of foreign people and cultures
5. ability to practice one's profession in an international setting

Later, Byram (1997) developed a list of intercultural communicative competences:

1. knowledge of others
2. knowledge of self
3. skills to interpret and relate
4. skills to discover and/or to interact
5. valuing others' values, beliefs, and behaviors
6. relativizing one's self
7. **linguistic competence**

In a recent study, Deardorff (2004) assessed 25 worldwide well-respected intercultural scholars. The author specifically investigated what are the most important criteria (intercultural competence) to be considered in internationalizing the student curriculum. As shown in Table 2.1, 17 different intercultural competence components were rated on a scale ranging from 1 (being least important) to 4 (being most important). The mean and standard deviation were determined for each of the components. The most provoking finding was not only the discovery that "foreign language" was rated with great controversy (SD=1.0), but also as one of the least important criteria.

Table 2.1: Administrators' Ratings of Specific Intercultural Competence Components

	ICC COMPONENT	MEAN	SD
1	Cross-cultural awareness	3.8	0.6
2	Respect for other cultures	3.7	0.6
3	Global knowledge	3.5	0.7
4	Self-knowledge/awareness	3.5	0.7
5	Global skills	3.4	0.7
6	Appropriate/effective behavior	3.3	0.6
7	Cross-cultural communication skills	3.3	0.9
8	Cultural empathy	3.2	0.7
9	Interpersonal skills	3.2	0.7
10	Cooperation across cultures	3.1	0.7
11	Appropriate attitudes	3.1	0.9
12	**Foreign language**	**3.0**	**1.0**
13	Adaptability	2.9	0.7
14	Flexibility	2.8	0.8
15	Depends on context/situation	2.8	0.9
16	Motivation	2.7	0.8
17	Technical skills	2.4	0.8

Note. Table from Deardorff, 2004, p.128

Recently, in their article "What does it mean to be globally competent?", Hunter, White and Godbey (2006) clearly confirmed the finding above: "Despite the concurrence of perception within the higher education community, the results of [our] study noted that language learning and travel abroad are not necessarily at the core of what it takes to become globally competent" (p.278). In a different light, Hambrick, Davison, Snell and Snow (1998) qualify language proficiencies as crucial for multinational workgroups. As cited in Hambrick et al. (1998), Geringer (1988) claims that the absence of language aptitudes in diverse workgroups "has caused more than a few disasters" (p.214).

In the limitations of her study, Deardorff mentioned that most of the respondents to her questionnaire were experts whose views were biased toward a western understanding of the world (2004). Thus, the tendency to consider "foreign language" as an essential key for mobility and adaptation to diverse environments seems to be more important for individuals, institutions and countries which are

rather under power than in power.

Most peers (locals and international students) I met at foreign language faculties (i.e., English, German, Russian and Italian) in the United States and in Germany dedicated hours of every day learning to ameliorate their communication skills. These individuals had at least one goal in common: they wanted to be able to either serve foreign demands locally or to ease accessibility to diverse networks abroad. Furthermore, before to evaluate foreign language aptitude in the global economy, one should take into account what national immigration department officers require from newcomers.

Dustmann (1994) stressed a strong relationship between the willingness to learn foreign languages and the readiness to fit into a new workgroup. It has been found that the ability to speak different foreign languages associates with a high educational background and with a greater ability to adjust within new environments (Organization for Economic Cooperation and Development, 2001). It should be also taken into account that someone possessing basic foreign language skills and openly willing to use them will probably better manage cross-cultural situations in international workgroups than someone who is mastering the language but not willing to cooperate (Mendenhall & Oddou, 1985, cited in Shaw & Barrett-Power, 1998).

A study led in Dortmund assessed attitudes of young university graduates (females: N=82, males: N=145) prior to their entering the job market (F. J. Bade and C. Brand and U. Greiwe and T. Terfrüchte and K. A. Usunov, 2006). Results showed that female graduates valued knowing foreign languages and studying abroad more than male graduates. The number of the females (33%) reporting that abroad studies and foreign language competences were very important was clearly larger than the number of the males (25%) who reported the same. In a different study, a national survey showed that more young American women (18%) than men (11%) underlined the necessity to speak foreign languages (Roper Public Affairs, 2006).

The following statistics will provide further facts about the status-quo of foreign language usage in different countries. Out of the 56 percent of Europeans who know one foreign language, 38 percent know English (Eurobarometer, 2006). However, in 90 percent of the time, they already learned English as pupil (Campus Europae, 2005). Although in the next 10-15 years the number of English learners will decline (Graddol, 2006), today English accompanied with French, German, Spanish and Russian account altogether for 95 percent of the taught languages within the majority of EU countries (Campus Europae, 2005). Yet, globally speaking, about three quarters of us speak non-European languages (Ludden, 2000). Hence, 90 percent of the interviewed 28'694 citizens (from 25 EU countries) shared that knowing foreign languages other than English, French, German, or Spanish would not be useful (Eurobarometer, 2006). These numbers reflect the conviction that some languages are considered as more "prestigious" and therefore ascribed to a higher degree of power (Carli et al., 2003).

The National Council of Organizations of Less Commonly Taught Languages (2006) revealed that less than one out of ten American college students is major-

ing in foreign languages. Only 9 percent of them are learning Arabic, Chinese, Japanese, Russian and Indonesian (councilnet.org). Research indicates that attitude toward the population of the target language may determine whether the learner will achieve fluency (Gass & Selinker, 2001). Monolingualism encourages ethnocentrism and provincialism (Parrillo, 1996).

Multicultural classroom studies showed that teachers who demonstrate negative attitude toward the language children speak at home do not respect these children either. Such attitude has most often a negative impact on children's educational progress (Ball & Lardner, 1997, cited in Lee & Oxelson, (2006). Lee and Oxelson (2006) found in their explorative study that teachers with proficiency in foreign languages demonstrated more sensitivity toward diversity issues. Cloud and Genesee (1998) revealed that high language aptitude "fosters a broader global perspective and greater intercultural tolerance" (cited in O'Leary, 2005, p.95).

Within the scope of the current study, it would be consequential to investigate whether the amount of self-reported spoken languages relates to attitude toward diversity:

Prediction (11) [EXPLOR]: Participants reporting a higher amount of spoken languages will demonstrate a better attitude toward diversity than participants reporting knowing less languages.

Procedures involved in learning foreign languages enhance cognitive flexibility (Bialystok, 1987; Cataldi, 1994). An amazing study led by Armstrong and Rogers (1997) showed that after only one semester of Spanish instruction (three times a week for thirty minutes) children scored significantly higher on math tests than those who did not receive it. Cooper (1987) found that students who learned a foreign language in high-school scored significantly higher on college entrance tests (math and verbal) than those who did not take a foreign language class. Students living in low socio-economic areas performed just as well as students from privileged areas when a foreign language program was offered at their schools (Cooper, 1987). Learning foreign languages at school helps students to attain deeper understanding of other cultures as well as to improve their thinking process in terms of problem-solving, conceptualizing, and reasoning (Curtain & Pesola, 1994). Met (1998) found that foreign language learning ameliorates students' critical thinking ability and enhances their cognitive development. On the other side, Sung, Padilla, and Silva (2006) noticed that when students are enrolled in a language course only to meet the requirements, benefits are only partial.

Benet-Martinez, Lee, and Leu (2006) indicated that individuals raised in bicultural and/or bilingual families engage in higher levels of cognitive processing on a daily basis. While being regularly exposed to cognitively demanding procedures such as comprehending, writing and speaking a new language, individuals improve their mental flexibility along with "enriching cultural insights and perspectives" (Parrillo, 1996, p.10). A study which required participants (Finnish) to retrieve words in a foreign language (English) revealed activation of a widely distributed network of frontal and prefrontal structures (U. Halsband and B. J. Krause and H. Sipilä and M. Teräs and T. Tolvanen and U. K. Rinne and A.

Laihinen, 2002). Regular activation of prefrontal regions of the brain "appears to yield widespread benefits across a range of complex cognitive tasks" (Bialystok et al., 2004, p.302). The very same areas are associated with working memory and goal-directed behavior (Frank et al., 2001). Prefrontal cortex is where "flexible information transformation" is proceeded (Postle, 2006). According to Postle (2006), "flexible information transformation" relates to problem solving capability, because it fosters "the ability to represent information in a different format, or to consider it from a different perspective" (p.31).

When professionals all from different countries speak together in English, the fact that they know other languages may impact the way of how they are going to get along with one another, how they are going to perceive and reflect upon problems, and how they are going to contribute to solve them. Since languages affect the way one think (Sapir-Whorf Hypothesis), a group composed of participants coming from different countries and thus having learned different languages might benefit in terms of group decision quality. Therefore, the following is predicted:

Prediction (12) [EXPERIM]: When averaged at the group level, a higher amount of languages, which members of a group speak, will positively affect group performance.

2.8.4 Positive Appraisal of Human Cultural Differences

"Diverse societies - when they are open and free - are breeding grounds for creativity. And perhaps even more rewarding is the benefit diversity brings to the quality of all our lives"

Ambassador William R. Timken, Jr., Berlin, Germany

In a time when workforce dehomogenization is taking place, scholars are increasingly investigating the effects demographical heterogeneity might have on workgroup performance. The screening of individuals' sensitivity toward demographical heterogeneity prior to workgroup interaction is not uncommon. Pucik, Tichy, and Barnett (1992) stress that the current workforce needs professionals whose modes of thinking and the way they interact with others transcend ethnocentric spheres.

Literature on interpersonal communication underlines the importance of positive appraisal of human differences. For instance, Chickering and Reisser (1993) stress that in order to develop mature interpersonal relationships, humans have to work on their "ability to accept individuals for who they are, to appreciate and respect differences" (p.146). Kuh, Douglas, Lund, and Gyurnek (1994) consider the appreciation of differences as a component of cognitive complexity, a skill that enables someone to think critically and evaluate others logically.

The acquisition of intercultural competence or, more precisely, the development of intercultural sensitivity has been the primary focus of research of Bennett (1986; 1993). According to Bennett, an individual's growth toward understanding diversity moves through six stages. The first stage is **denial of difference**, i.e., the individual is unaware of cultural differences due to his or her isolation. In the second stage called **defense against difference**, people do recognize differences across cultures, however, perceive them as threatening to their well established world view and identity. Individuals in the third stage called **minimization of difference** stress human commonality while trivializing cultural differences. During the fourth stage called **acceptance of difference**, people begin to accept and respect cultural differences as an alternative way to their own believes. The fifth stage called **adaptation to difference** is characterized by individuals' intentional adoption of multiple cultural frames of reference. In the sixth and last stage called **integration of difference**, the individual has internalized the world view of more than one culture and developed a dual or multiple identity. The first three stages of intercultural sensitivity seem to mirror the affective and conative non-congruence among culturally diverse workgroup members as predicted by the first school of thought. Positive appraisal of human differences and attitudinal sensibility are to be found in the three upper level stages. In order for cooperation to take place within demographically heterogeneous workgroups, every group member should at least achieve an "acceptance" level.

Within a new workgroup composed of individuals with different cultural backgrounds, members' positive attitude toward diversity should facilitate information

exchange resulting in better group outcomes. Valuing cultural differences seems to be the condition for the benefits of diversity, which is advocated by the second school of thought.

Regarding the impact group members' positive appraisal of human cultural differences may have on group outcomes, as argued above, it will be examined whether participants' attitude toward diversity (when averaged at group level) relates to the quality of decision-making:

Prediction (13) [EXPERIM]: Positive attitude toward cultural differences will enhance decision-making quality in heterogeneous workgroups.

Cultural sensitivity tests are useful in different contexts. From a social and organizational perspective, they show however at least one pitfall. One may call it "selective sensitivity". While cultural sensitivity models (e.g., Bennett, 1993; Berry et al., 1992; Bochner, 1982) describe the stages one goes through when acquiring intercultural competence, they fail to tell whether someone who is, for instance, fully acculturated in terms of British culture may be willing to cooperate with someone who is from Bangladesh, Venezuela, or Senegal. In short, high cultural sensitivity scores might still be hiding commitment to work in any diverse workgroup.

Many scholars have conducted research on how individuals differ in their attitudes according to demographical variables such as gender, age, nationality (e.g., Hofstede, 2001; Pohan & Aguilar, 2001). Few have investigated how individuals differ specifically in terms of attitude toward diversity. For instance, after having surveyed 2'383 students across 11 US universities, Landrum, Dillinger and Vandernoot (2000) found that female students tend to recognize, value and appreciate diversity on campus more than male students. Specifically on rating statements such as "diversity promotes personal growth" and "diversity strengthens communities", females showed significantly better attitudes than males. Similar results were found by Meader (1998), Sands (1998) as well as Sax and Arredondo (1999). Another significant difference was found between majority and minority students. European-American students assigned less value to diversity on campus and were less knowledgeable about multicultural activities supported by the universities than African-American, Indian-American, Alaska-Native and Hispanic students. Engberg et al. (2003) found not surprising that students who live in primarily white neighborhoods and attend predominantly white high schools have mostly white friends and are less likely to interact with peers having a different cultural background. Landrum and his colleagues (2000) discovered that non-traditionally-aged students (over 25) valued diversity more than students who were 24 years old and younger. In a different study, researchers from Ohio State University (Von Hippel et al., 2000) have discovered that older adults tend to have a more negative attitude toward diversity than young adults (e.g., agreeing upon a statement "African-Americans are less intelligent than whites").

There is empirical evidence that demographical variables have impact on attitude toward diversity, as illustrated above:

Prediction (14) [EXPLOR]: Participants will differ in their attitude toward diversity according to demographical variables (e.g., gender, occupation).

2.8.5 Positive Appraisal of Human Status Differences

"Who owned less than ten heads of cattle, was classified as Hutu"

Prof. Dr. Albert Wirz, Humboldt Universität zu Berlin

The Social Dominance Orientation (SDO) is a highly reliable scale sensing attitudes toward social hierarchy (Pratto et al., 1994; Sidanius et al., 2000). SDO measures "a general attitudinal orientation toward intergroup relations, reflecting whether one generally prefers such relations to be equal, versus hierarchical" (Pratto et al., 1994, p.742). SDO scores have been shown to have a strong positive relationship with authoritarianism (Duriez & Van Hiel, 2002). Moreover, researchers discovered a substantial correlation between SDO scores and variables such as racism, militarism, punitiveness, and conservatism (Van Hiel et al., 2004). Individuals with higher SDO scores tend to prefer to be the ones who dominate others (Altemeyer, 1998) and share believes of racial superiority (Sidanius & Liu, 1992).

Scholars have not yet used SDO scale to measure social attitudes at group level. No study looked at how members' Social Dominance Orientation may affect performance in workgroups. Years before the SDO scale was developed, evidence had been found that when workgroups are composed of members with different nationalities some forms of dominance (i.e., verbal and non-verbal) take place during group interactions (Margalit & Mauger, 1985). In addition, studies revealed a relationship between dominance and perception of expertise (Littlepage & Mueller, 1997). This phenomenon may greatly impact workgroups' decision making. Members' perspectives perceived as relevant because of being delivered with great self-confidence may influence group outcomes. Similarly, it may be anticipated that workgroups in which members report a positive attitude toward people having a different social status (low SDO scores) may be effective at exploring everyone's perspective as well as using influence techniques instead of power in order to make decisions.

According to Driskell et al. (2003), group members who are white, males, and those having a higher occupational status tend to take more commanding roles and to orient their colleagues on what to do, whereas females, ethnic minorities, and those with lower occupational status demonstrate more compliance during group interactions. Depending on how members' status differences are perceived, scenarios such as who talks to whom, who speaks more often, and whose suggestions are more likely to be accepted may vary from group to group. Someone with higher SDO scores may feel being more valuable than others and believe to offer more valuable contribution. On the other side, individuals with low SDO scores may be more open to consider potential solutions from any group member.

Although it has not been investigated within workgroups, higher levels of SDO may have positive effects on group outcomes. It has been found that when placed into dyads participants with higher SDO scores were more likely to negotiate over a price estimate they received for a car repair than participants with lower SDO

scores (Magee et al., 2007). Thus, when applied to workgroups, tendency for social dominance may relate to the propensity to initiate interaction in problem solving. Members' higher SDO scores may have an important "kicking" effect on starting the discussion, which sounds reasonable for a short-term task. Furthermore, Driskell et al. (2003) suggest that when equipped with abilities, expertise and competences, a higher status group member may be very influential in using others' resources.

Within the scope of the current investigation, I am going to explore whether Social Dominance Orientation of group members affects group performance:

Research Question (15) [EXPERIM]: Do members' SDO scores relate to decision-making quality?

I have not found any research which specifically examines workgroup members' attitude toward diversity while taking into account their perception of social status differences. Let us look at the following scenario. An individual has been sent to a different country to work on a developmental or social project. Although he or she may love the culture of the country, the work environment will not only be influenced by the culture per se, but also by colleagues' social status. Colleagues' social rank (e.g., lower cast person) may affect the newcomer's perception and thus his or her motivation to interact with them. The status aspect of diversity is adding another attitudinal variable which may affect willingness and ability to cooperate (conative aspect of congruence).

In the current investigation, workgroup members will not be able to choose whom they are going to work with. Although the participants will be university students, group members' status differences will still be appraised. When someone's status is perceived as inferior or superior, his or her views, ideas and perspectives might be either ignored or valued, independently from the cultural background. A member who perceives others' status as inferior may use power instead of influence in the process of making group decisions. Again, such an instance reveals that a positive attitude toward diversity may not necessarily mean a positive appraisal of status differences.

In the current investigation, I am going to examine how participants' attitude toward diversity relates to their perception of social status differences:

Research Question (16) [EXPERIM]: What type of relationship exists between the Intercultural Attitude Orientation (IAO) and the Social Dominance Orientation (SDO)?

3 Explorative Survey Study

In order to investigate predictions (6), (9), (11), (14) and research question (7) regarding the effects of demographical composition on workgroup performance, a questionnaire entitled Intercultural Attitude Orientation (IAO) was developed and administrated to gather information on individuals' attitude toward diversity and to explore their attitudes toward workgroups composed of members with a different cultural background. The questionnaire was not used to investigate attitudes of a specific population, but rather to provide a predictive measure of cooperativeness for individuals who wish or have to join global workgoups.

3.1 Population & Research Sample

The respondent population came from a wide range of individuals diverging in occupational and cultural backgrounds. Participants' reported occupations have been grouped into four main categories. Participants active at upper management or higher administration levels composed the first category (14.9%). The second category included university professors, researchers as well as post-graduates (25.3%). The third category reflected any professionals possessing at least a higher education degree or equivalent (40.0%). The fourth category was represented by university students (19.8%).

The average age of the respondents was calculated according to their occupations. Higher management participants were on average 44 years old (SD=12), university professors and post graduates 44.5 years old (SD=13), professionals 38 years old (SD=12) and university students 23 years old (SD=5).

None of the countries had enough participants to make statistical comparisons with regard to attitudinal difference; thus, they were grouped only for descriptive purposes according to world regions as suggested by studies led by the UNESCO. The following Table 3.1 displays how e-questionnaire participants have been demographically categorized.

Table 3.1: E-questionnaire Participant Demographics

Region	**Administration / Management**	**Scientific / Academia**	**Professionals**	**University Students**	**Other / Unknown**	**TOTAL**
Western Europe	30 / 17	41 / 17	39 / 54	36 / 89	4 / 9	150 /186
North America	18 / 22	24 / 22	61 / 67	5 / 12	4 / 4	112 /127
Central & East Europe	40 / 22	79 / 47	64 / 89	20 / 54	0 / 12	203 / 226
Lat. Am. & Caribbean	1 / 3	12 / 6	10 / 15	0 / 3	1 / 3	24 / 30
South & West Asia	6 / 2	6 / 4	14 / 11	2 / 0	1 / 0	29 / 17
Central & East Asia	10 / 6	26 / 8	17 / 26	8 / 12	1 / 7	62 / 59
The Pacific	6 / 0	5 / 1	11 / 8	0 / 0	0 / 0	22 / 9
Arab & Islam States	6 / 0	15 / 1	10 / 8	3 / 5	0 / 1	34 / 23
Sub-Saharan Africa	0 / 0	1 / 9	5 / 4	3 / 2	0 / 0	9 / 8
TOTAL	117 / 74	209 / 116	231 / 282	77 / 177	11 / 36	645 / 685

Note. (1) World region categorization was set according to UNESCO - EFA GLOBAL MONITORING REPORT (2006). (2) The slash separates male from female participants. (3) Pilot study and group experiment participants are not included.

Although participants strongly differ across cultural backgrounds, they represent a privileged population sharing above average socio-economic status. All are possessing an email address and access to an online service. An isolated case was a participant from Vietnam who had to ride his bicycle for about ten kilometers to access an online service.

3.2 Research Method

The design of the explorative investigation is based upon a structured questionnaire. The survey instrument consisted of two parts (see Appendix C1 on page 148). The first section asked the participants for demographic information including nationality, gender, age, and occupational status (six items). The second section requested experience (qualitative) and attitude (quantitative) related information (17 items). Similar procedures in leading an explorative study may be found in Kelley and Meyers (1995).

Attitudinal items compiled for the current research have been adapted or created using variables and criteria reflected in literature on demographical sensitivity, intercultural competence, and cognitive flexibility (e.g., Brewer & Kramer, 1985; Cox, 1993; Cui & Awa, 1992; Deardorff, 2004; Dovidio et al., 2003; Endicott et al., 2003; Hammer & Bennett, 1998; Matveev, 2002) and in cultural sensitivity literature (e.g., the Cross-Cultural Adaptability Inventory (CCAI), the Intercultural Communication Competence Questionnaire (ICCQ), the Intercultural Development Inventory (IDI)). Although some items are similar to already validated scales, they were modified to suit the assessment of attitude toward diversity, more specifically workgroup diversity.

Operationalizing attitude toward diversity is thwart with difficulties. Scholars have done it before, but not with a specific focus on workgroup diversity. Prior to accurately measuring attitude toward diversity, one must first come to grips with a conceptual definition of workgroup diversity (see p.9).

The extensive procedures of developing the e-questionnaire included an intensive review of literature, interviews with familiar and unfamiliar individuals as well as reflections from my own experience having worked in demographically homogeneous and heterogeneous workgroups, i.e., five years within diverse workgroups on high-risk construction sites (Switzerland), eight years within diverse student group-projects and study groups (United States), and four years coordinating student research-projects (Germany).

3.2.1 Content Validity

The explorative intent of a questionnaire meant to be administrated across different nations is unlikely to result in a high external validity, thus, two factors were taken into consideration to increase external validity of the explorative study.

Firstly, to make the questionnaire understandable across demographics, it was offered in four different languages: English, German, French, and Russian. Unfortunately, the Spanish version was completed after the data gathering period. The

questionnaire was first composed in English and translated afterwards. In order to ensure conceptual equivalence, each item was then back-translated by native speakers, all of which had advanced university degrees.

Secondly, similar to Pohan and Aguilar (2001), the content, the sensibility as well as the orientation of each question were reviewed by a panel composed of individuals varying in gender, nationalities as well as occupational status. The initially suggested IAO items have been reviewed by experts (N=4) as well as citizens from various countries (N=17). A feedback report was provided by individuals living in the USA (three tenured social scientists and three undergraduate students), the Ukraine (two engineers, one flight control manager), the United Kingdom (an educator), Germany (one tenured social psychologist, one retired teacher, two educators, and five undergraduate students) as well as in Switzerland (one educator and one psychologist). The content of their reports based upon their own experience with various workgroups appeared to match the intent of each question. Only minor changes in the wording of some items were made before the first wave of questionnaires was sent.

3.2.2 Item Description

The first part of the e-questionnaire (see Appendix C1 on page 148) consisted of six biographical questions asking for participants' cultural background (country of origin / nationality / ethnicity) (Q1), native language(s) (Q2), age (Q3), gender (Q4), education (field or type of study/apprenticeship) (Q5), and occupation (Q6). The questionnaire items of the second part were grouped according to content into seven constructs: diversity exposure, spoken languages, workgroup dynamics, similarity attraction, social categorization, social identity, and cultural ambiguity.

Diversity Exposure. Question seven was meant to qualify and quantify the experience participants had with people of different cultural backgrounds. (Q7) Do you already have an experience interacting / working with people having a different cultural/ethnic background from yours? If yes, what kind?

Spoken Languages. Question eight asked about participants' language aptitudes. (Q8) Do you speak any foreign language(s)? If yes, which one(s)?

Workgroup Dynamics. The following questions focused on sensing participants' attitude toward the dynamics of workgroup diversity. (QR12, reverse-scored) In a workgroup, a greater amount of new ideas can be generated, if individuals with different cultural backgrounds are present. (Q13) In a workgroup with colleagues having different cultural backgrounds, there are greater chances for an incurable conflict, than in a homogeneous group. (Q19) Information sharing in a team decreases, if individuals with different cultural backgrounds are present.

Similarity Attraction. The following three items assessed participants' at-

traction to people with similar cultural backgrounds to theirs. (Q15) When in a different country from my own, I (would) look forward to meeting my fellow citizens. (Q16) I tend to develop closer relationships with people having a similar cultural background than with people having different cultural backgrounds. (Q17) Due to cultural similarities, my fellow citizens are more likely to understand me. (Q21) In which environment (would) do you prefer to work? With people having a similar cultural background, with people having a different cultural background, or it does not matter whom I work with.

Social Categorization. The next three items assessed participants' tendency to categorize others based upon readily-detectable characteristics as predicted by the first school of thought, more specifically the social categorization theory. (Q14) Hearing an individual speaking my native language incorrectly confuses me. (Q22) If you had the choice, from which country/region or countries/regions would you choose colleagues? (Q23) If you had the choice, from which country/region or countries/regions would you avoid choosing colleagues?

Social Identity. The following item sourced word for word from Hammer and Bennett's Intercultural Development Inventory (IDI) questionnaire (cited in Klak & Martin, 2003). It examines the extent to which individuals feel anchored to a culture. (QR20, reverse-scored) I do not feel I am a member of any particular culture; I feel I am something else. Someone who reports a low rating on this item tends to mirror cultural marginality.

Cultural Ambiguity. The following questions assessed whether or not the participants were tolerant toward cultural ambiguities and the presence of colleagues with different cultural backgrounds. (QR9, reverse-scored) Establishing an interpersonal relationship with individuals having a different cultural background is easy. (Q10) Dealing with cultural uncertainties is troublesome. (Q11) I (would) feel stressed working with people having a different cultural background. (QR18, reverse-scored) I can deal with whatever difficult feelings or frustrations I might experience in a new culture.

3.3 Data Collection Procedures

The purpose of the e-questionnaire was to reach as many and diverse individuals as possible. In order to increase organizational representativeness, several occupation-related words (e.g., medicine, military, software, art, consulate, etc.) have been paired with the name of different world countries (e.g., India, Poland, Vietnam, Slovenia, Algeria, etc.) prior to being entered as keywords into a software (similar data collection procedures may be found in Devine, Clayton, Philips, Dunford, & Melner, (1999). The software identified personal homepages according to the entered keywords and provided a list of randomly gathered e-mail addresses. To keep the anonymity as well as to personalize the request, the recipients' ad-

dresses were inserted as BCC (Blind Carbon Copy). Contrarily to any business and/or sale oriented mails, also known as SPAM, the e-questionnaire provided secure and genuine contact information. As Fraley (2004), psychologist and expert for online research programmation, explains human-subject investigations conducted over the internet include two main ethical factors to be taken into account. The first factor is participation should be fully voluntary. Each participant may literally withdraw at anytime, even after having answered one or two questions. The second factor is that no personal identifying information should be collected by the researcher. This code of conduct was adhered to. About a half dozen participants requested my doctoral advisor to email them back and confirm the originality of the study. After his prompt and effective support, each potential participant chose to take part in the study.

The data gathering period occurred between July and December of 2004. Numerous individuals (N=1351) participated in the study by replying with their answers to the questionnaire. The participation was very low (10% returning rate). In fact, while the number of studies using email to collect data has been increasing over the past twenty years, the average questionnaire return rate appears to be decreasing. It was found in a review of thirty one e-studies that response rate decreased from about 46% in 1995 to 31% in 1999 (Sheehan, 2001).

The collection of data for this study was bounded by three major implications. The first one was of a financial nature. The study had to be conducted with minimum costs. The only tools that were used were a personal computer and the internet. The second implication associated with technological and ethical factors involved in requesting unknown individuals from various parts of the world to respond to an e-questionnaire. The third implication involved getting permission from an internet provider to send thousands of unsolicited email invitations. Despite these obstacles, the entire process was mentally rewarding. Many participants left comments when replying to the email, below are a few examples:

- Hi Mr. Sciboz,

  Thanks for your questionnaire. I'd be pleased to answer them as follows and hope my answers will be of some help to your thesis preparation. In case you have additional inquiries or need further clarification, please feel free to contact me.
  Yi Yong

- Dear Daniel,

  Here I am sending you the reply, and I will be glad to receive the results of your studies,
  Dr. M. Mohammed

- Hi Daniel,

  Very good project and pls find below my answers to the questionnaire.
  Kind Regards,
  Alan van der Hammen

- OK Mr. Sciboz,

  I don't mind helping out with this questionnaire. Ethnic conflict is a big question all over the world and anything that can be done to help understand the way people react to different cultures might be helpful.
  K. Lavarov

- Hallo!

  Diese Untersuchung klingt spannend - aber (aufgrund eigener Erfahrung) auch nach viel Arbeit...Klar interessiere ich mich für die Ergebnisse und würde mich über eine Nachricht freuen! In diesem Sinne: weiterhin frohes Schaffen und viel Erfolg! Grüß,
  M. Meier

- I don't know if it was a spam, but the way this email was written and looking at the content it looked like a genuine email. So I replied. I hope it will help the researcher.
  Madhi from India, Software Engineer

3.4 Scale Analysis

Each questionnaire respondent was provided with a number and thus no longer associable with any personal data. The data from the completed surveys were entered in the order of reception. A guideline was developed in order to enter qualitative responses as categories (see section about categorical data generated from qualitative answers on page 54).

A factor analysis was chosen with the intent to explore as well as to clean raw data (preliminary analysis). Factor analysis is a well adopted statistical technique in psychology and social sciences (J. Bortz and N. Döring, 2003; Kline, 1994). Its purpose is to explore how different variables may be associated into one or more main constructs or dimensions (Kline, 1994) while maintaining "as much information as possible from a larger set of measured variables" (Hardin et al., 2004, p.328). Factor analysis reduces a greater number of interrelated variables to one or more representing factors (Tinsley & Tinsley, 1987).

The first round of the e-questionnaire analysis extracted two different factors with eigenvalues greater than one. After obtaining factor loadings for each item, low factor loading items were dropped one by one until an acceptable extraction was reached. In this process, items QR9, Q15, QR18 and QR20 were excluded from further statistical evaluation. Item Q21 revealed unsound disclosures. Many participants claimed that cultural background is not a criterion for them while choosing colleagues; though, on item Q23 the same participants reported to dislike potential colleagues due to region of origin.

With regard to the explorative purpose of this study, outliers as well as questionnaires with missing values have been included toward further analyses.

The second round of analysis yielded only one distinct factor with eigenvalue greater than one. It explained 33.30% of the total variance. Loadings reflecting

the final factor solution (global sample, N=1351) were of medium size, ranging from .403 to .628. Only two items (QR9 and Q14) loaded below .500. Cronbach's alpha of the remaining 8 items was reasonable (α=.70).

Thus, factorial analysis suggested the extraction of one main component. It brought relevant items reflecting following constructs - cultural ambiguity [CULTAMBIG], similarity attraction [SIMATT], workgroup dynamics [WGDYN], social categorization [SOCCAT] - into one and final main dimension: The Intercultural Attitude Orientation (IAO).

In the confirmatory analysis, when comparing the sample of the explorative study (global e-questionnaire) with the experimental study sample (local group experiment), the same one-factorial solution of eight items was revealed. Each sample reflected similar loading structures, with the exception of Q14. While the student sample of the global e-questionnaire showed a loading for item Q14 as low as .454, the experimental study sample consisting exclusively out of students loaded much higher (.588) on this item. Consistently with the global e-questionnaire sample (N=1351), the local group experiment sample (N=249) confirmed the extraction of IAO as final factorial component accounting for 32.12% of the total variance and displaying the same internal consistency reliability (α=.70).

In addition to the main scale (IAO), the explorative study considered further predictors. Type and quality of experience with diverse people, marginal identity, foreign language aptitudes and criteria for colleague preference were integrated into the IAO for further testings. The following analysis presents how these predictors were created using a qualitative method (i.e., turning qualitative answers into nominal and/or ordinal variables).

3.4.1 Qualitative Analysis (Answer Categorization)

Following the Grounded Theory methodology (Glaser, 1998; Strauss & Corbin, 1998), the qualitative responses to items Q1, Q7, Q22, and Q23 were thoroughly studied and compared across participants. From the answers, a preliminary set of thematic categories was compiled and then clustered into main categories.

Out of responses to Q7 (Do you already have an experience interacting/working with people with a different cultural/ethnic background from yours? If yes, what kind?), type and quality of experience with diversity [EXPOSURE] emerged as a main theme, and then was coded into three categories. The first category corresponds to participants who have a very little or short term experience gained from interacting with members from different cultures locally, at conferences, and/or on vacations. The second category includes participants who commonly gathered a medium to long run experience with other cultures at work, at school or from a foreign exchange program. The third category represents participants who have a regular and deep experience with diversity. Typically, these participants have culturally different parents/relatives, or are married to someone having a different cultural background. They have most often cultivated deep friendships with individuals from different countries.

Sensing the effects of country of origin (Q1) on attitude toward diversity may be ambiguous since the way more and more individuals identify themselves goes

beyond their citizenship. In order to define the origin variable, the e-questionnaire participants were analyzed by how they identified themselves when asked about their cultural background. Upon comparison on how similarly or differently participants self-described their cultural origin, two main categories falling under the theme identity [IDENTIT] were discovered. The first one represents participants who provided the name of their nationality which corresponded to the country of their origin (e.g., France, French). This category was called main group identity (N=993). The second category represents individuals who after providing their citizenship named their ethnicity (e.g., Germany, Afro-German; Germany, Turkish born in Berlin). This category was subgroup identity (N=361). Participants identifying themselves with a specific ethnicity not representing the country of their citizenship tend to name it. According to Phinney (1993), someone's reflections on ethnic issues culminate in acceptance and internalization of his or her own ethnic group membership, i.e., a subgroup of the main culture.

With regard to questions 22 (If you had the choice, from which country/region or countries/regions would you choose colleagues?) and 23 (If you had the choice, from which country/region or countries/regions would you avoid choosing colleagues?), participants self-disclosed their preferences for colleagues in three distinct ways. Firstly, more than half of the global e-questionnaire participants (N=684) answered the questions by naming countries whose citizens they would prefer or dislike as colleagues. The country naming was most often supported with positive/negative national stereotypes (Hagedoorn, 1991) or paternalistic and contemptuous prejudices (Fiske et al., 2002). Answer examples reflecting these patterns are below:

- "[I would like to work with people from] the northern part of Europe, as Germans for instance, they work harder than the Italians".
- "[I would not like to work with people from] very poor countries - people from there do strange things, like taking money from a project and disappearing".
- "[I would not like to work with] the ones that hate westerners".
- "Interesting you did not ask about working with people of the other gender. I find that working with women is a problem and do not like it".

While providing answers to questions 22 and 23, such participants were in essence focusing on demographics, i.e., readily-detectable human characteristics. Participants communicated their preferences for colleagues by adding explanations based on their experiences. Their statements disclosed a focus on deeper human dimensions, which is illustrated as follow:

- "It does not matter to me where colleagues are from, what matters is what kind of persons they are. Everywhere there are every types of people. I just want to work with someone who gets the job done and has a good sense of humor".

- "if i have a choice i chose to cooperate with people who have something to offer in terms of work, friendship, challenges, solutions, etc. this can be performed by any human being interested in making an effort, no matter where they come from".

- "I have lived and have had working relationships with people from all corners of the world, it does not matter with whom I work with as long as people show respect".

- "if I would have the choice, my criteria would be level of education, tact, and sensitivity, rather than nationality. Actually, this is cultural background to me".

- "It would not matter. I would look for colleagues with complementary skills, shared vision and goals".

- "Es ist mir egal, aus welchem Staat oder aus welcher Region kommen die Leute. Am wichtigsten ist, dass sie gute Mitarbeiter wären und dass wir schnell auch die Freundschaft bauen könnten. Es ist ja leichter zu arbeiten, wenn man mit den Leuten befreundet ist und wenn zwischen die Leute eine gute Atmosphäre ist. Ich bin blind und ich sehe, wie es wichtig ist, dass man gute Kollege findet, dass sie dich verstehen und es ist auch wichtig, dass ich sie verstehe. Das ähnliche ist auch mit den Leuten der anderen Kultur. Ich wähle die Kollegen nie aufgrund aus welchem Staat/welcher Region sie kommen und ich werde es auch nie machen. Kultur spielt hier keine Rolle, sondern die Persönlichkeit von Menschen".

Typically, participants who expressed their preferences based on deep human dimensions wrote longer and more carefully formulated answers than the rest of the participants, which reveals a greater complexity (Schroder et al., 1967). They did so presumably because questionnaire items Q22 and Q23 did not fit into their life-long forged schemes. The above mentioned participants also stated that other than demographical characteristics matter more when looking for colleagues; specifically, they identified aspects such as personality and expertise as most relevant when choosing colleagues. The discussed way of self-disclosing the preferences for colleagues underlines a focus on human deep-level characteristics.

368 participants reported that human origin is not in question when choosing colleagues, without providing further comments. The answers of these participants could neither be classified as oriented on readily-detectable nor on deep-level human characteristics. In this regard, the participants were set into the third category, which I called "no preference".

3.5 Results

This section provides an overview of the results[1] on how participants with different characteristics (gender, occupation, focus on human characteristics, quality of exposure to diversity, foreign language aptitude) differ with regard to their attitude toward diversity.

Table 3.2: Descriptive statistics: IAO Mean and Standard Deviation for the Study Variables

STUDY VARIABLES	Mean	SD	N
GENDER			
Male	4.61	0.98	646
Female	4.85	0.96	696
OCCUPATION			
Administrative / Managing	4.89	0.93	189
Scientific / Academia	4.77	0.95	324
Professional	4.66	1.02	515
University Students	4.73	0.94	255
Other/ Semi-Routine	4.80	0.98	47
PREFERENCE COLLEAGUES			
Focus on Readily-Detectable Charact.	4.42	0.91	682
No preferences	5.06	0.94	368
Focus on Deep-Level Charact.	5.18	0.87	275
EXPERIENCE TYPE			
Little Experience	4.31	0.91	507
Medium Experience	4.85	0.92	571
Extensive Experience	5.30	0.86	267
LANGUAGES			
1 or 2 Languages	4.59	1.00	597
3 or 4 Languages	4.85	0.94	748

Note. Table represents only data from the global e-questionnaire sample.

The IAO scale values ranged from 1 to 7: the higher the value, the better the attitude toward diversity. The IAO mean scores along with standard deviation calculated for each characteristic (study variable) are to be found in Table 3.2.

Correlation coefficients revealing the relationship among rank variables (quality of exposure to diversity, focus on human characteristics, foreign language aptitude) and IAO scores are displayed in Table 3.3.

[1]The statistical software package, SPSS 11.01, was used to organize, tabulate, and analyze the survey results.

Table 3.3: Spearman's ρ Correlation Coefficient between Study Variables

	1	2	3	4
1. Intercultural Attitude Orientation	–			
2. Exposure to Diversity	.373**	–		
3. Human Characteristics Focus	.365**	.265**	–	
4. Language Aptitude	.143**	.205**	.020	–

Note. **p<.01, *p<.05 (two-tailed). The global and experimental samples have been combined.

Answers to the research questions and predictions formulated within the theoretical chapter will be presented below. The relationship between IAO and study variables as illustrated in Table 3.2 will also be discussed. Furthermore, the analysis of the data revealed other relationships among study variables, which will be presented in the additional findings section.

Prediction (14) [EXPLOR]: IAO

Participants will differ in their attitude toward diversity according to demographical variables (e.g., gender, occupation). On the IAO scale, female participants achieved higher scores (M=4.80, SD=.94) than male participants (M=4.59, SD=.97). Consistent with other studies (e.g., Baugh & Graen, 1997; Oyserman & Swim, 2001; Pohan & Aguilar, 2001), which used various instruments to sense attitude toward diversity, the current e-questionnaire sample revealed that female participants perceived different others significantly more positively than their counterparts ($F(1,1541) = 20.688$, $p<.00001$).

Whether participants differed according to their regions of origin was not calculated due to sample size inconsistencies. However, there were noticeable IAO score differences across participants' occupational groups (see Table 3.4). Participants occupying higher management positions tended to score the highest. Further, Tukey HSD revealed experimental student sample to have scored significantly lower than participants occupying a managerial position ($p<.001$), professors & post-graduates ($p=.004$) as well as the global student sample ($p=.015$).

Table 3.4: Descriptive Statistics: IAO Mean and Standard Deviation for Gender and Occupation

OCCUPATION	GENDER	Mean	SD	N
Administrative / Managing	**Male**	4.81	0.93	114
(Global Sample)	**Female**	4.99	0.92	74
Scientific / Academia	**Male**	4.65	0.94	206
(Global Sample)	**Female**	4.99	0.93	117
Professional	**Male**	4.50	1.01	231
(Global Sample)	**Female**	4.80	1.00	283
University Students	**Male**	4.52	1.01	77
(Global Sample)	**Female**	4.82	0.90	177
University Students	**Male**	4.39	0.88	102
(Experimental Sample)	**Female**	4.56	0.77	147
Other	**Male**	5.00	0.96	11
(Global Sample)	**Female**	4.73	0.99	36

Note. "Other" participants have not been included into statistical analyses.

Prediction (6) [EXPLOR]: Focus on Human Characteristics & IAO

Participants who tend to focus on human deep-level characteristics will have a better attitude toward diversity than participants focusing on human readily-detectable characteristics. The purpose of the current analysis was to uncover whether or not the predicted relationship existed between the way participants self-disclosed their preference for colleagues and their attitude toward diversity. As revealed from the qualitative analysis of questions 22 and 23 (see page 55), many participants from the global and experimental samples disclosed not having any preferences in choosing their colleagues. Nevertheless, with regard to attitude toward diversity, both participants with no preferences and those seeking for deeper human dimensions did not significantly differ from one another (see Table 3.5 below).

Table 3.5: IAO Mean according to Sample X Focus on Human Characteristics

	Readily-Detectable	No Preference	Deep-Level	**Total**
Global Sample	4.42 (N=684)	5.06 (N=368)	5.18 (N=276)	4.76 (N=1328)
Experimental Sample	4.19 (N=124)	4.90 (N=60)	4.89 (N=34)	4.49 (N=218)
Total	4.30 (N=808)	4.98 (N=428)	5.03 (N=310)	4.62 (N=1546)

Subsequently, both categories "no preference" and "deep-level characteristics" have been combined into one category. With respect to the global sample, participants who tended to focus on human readily-detectable characteristics scored significantly lower than participants focusing on human deep-level characteristics or having no preference ($F(1,1323) = 189.82$, $p<.0001$). This result was replicated with the experimental sample ($F(1,216) = 55.740$, $p<.0001$).

Post-hoc analysis (Tukey HSD) revealed no difference between participants from the global sample focusing on human deep-level characteristics or reporting no preference and those from the experimental sample with the same focus ($p=.25$). However, participants from the global sample with focus on readily-detectable characteristics reached significantly higher IAO scores than participants from the experimental sample with the same focus ($p=.019$).

Research Question (7) [EXPLOR]: Focus on Deep-Level Characteristics

What are the traits characterizing individuals who view others in terms of deep-level information? First of all, only 20.9% of the global e-questionnaire participants and 13.7% of the experimental study participants reported to seek for deep-level characteristics while choosing colleagues. There were more female than male participants taking part in the studies. When aggregated, both studies showed that more males (58%) than females (47.4%) tended to focus on readily-detectable human characteristics. While 52.6% of female participants reported interest in deeper human dimensions or disclosed to have no preference, 42% of male participants reported the same (See Table 3.6). Pearson's chi-square test revealed the significance of the reported differences between males and females ($\chi^2(1) = 16.96$, $p<.0001$).

Table 3.6: Focus on Human Characteristics according to Gender (in %)

	Readily-Detectable	No Preference / Deep-Level	**Total**
Male	58.0	42.0	100
Female	47.4	52.6	100

Note. Aggregated scores for the Global and the Experimental Studies

It was discovered that participants who reported to have extended exposure to diversity were less prone to prefer individuals as colleagues according to demographics (see Table 3.8). Both the global and experimental samples revealed such a pattern. When the two samples were aggregated, 30.5% of the participants with focus on deep-level human characteristics or with no preferences shared having extensive exposure to diversity, while 24.8% of them affirmed having little experience. In contrast, whereas 47% of the participants with focus on surface characteristics reported having little experience with diversity, only 13% of them informed to have extensive experience (see Table 3.7). A chi-square analysis indicated that participants who tend to focus on deep-level characteristics or have

no preferences were significantly more likely to have extensive experience with diversity than participants focusing on readily-detectable characteristics ($\chi^2(2) = 109.04$, $p<.0001$).

Table 3.7: Level of Exposure to Diversity according to Focus on Human Characteristics (in %)

	Little Exposure	Medium Exposure	Extensive Exposure	**Total**
Deep-Level Characteristics / No Preferences	24.8	44.7	30.5	100
Readily-Detectable Characteristics	47.0	40.0	13.0	100

With regard to the experimental sample, it was found that participants who self-disclosed having no preference or focusing on deep-level characteristics (N=107, M=2.65, SD=.92) scored much lower on the SDO scale (Social Dominance Orientation, see page 150), when compared to participants with focus on readily-detectable characteristics (N=142, M=2.99, SD=.90). In short, participants preferring individuals according to demographics have a significantly lower tendency to favor equality among people ($F(1,247) = 8.40$, $p=.0040$). In the literature, higher SDO scores have shown to relate to sexism, conservatism, and nationalism (e.g., Jost & Thompson, 2000).

Prediction (9) [EXPLOR]: Diversity Exposure & IAO

Participants reporting a higher level of diversity exposure will demonstrate a better attitude toward diversity than participants reporting less exposure. Spearman's ρ correlation indicated that the more and intense the exposure to diversity is, the better the IAO scores are. Both variables [EXPOSURE] and [IAO] do significantly correlate with each other: $\rho=.381$, $p<.001$ (one-tailed). The same relationship was replicated within the experimental study: $\rho=.386$, $p<.001$ (one-tailed). Consistent with Pettigrew and Tropp's meta-analysis (2006), the above correlation shows that a greater amount of exposure to diversity increases individuals' ability to perceive different others more positively.

Further, an analysis of variance was performed in order to assess whether participants differed in attitude toward diversity according to the reported level of experience. A significant difference in the expected direction was observed between the three groups of participants reflecting three different levels of diversity exposure ($F(2,1560) = 123.347$, $p<.0035$). Tukey HSD showed significant differences between the three levels of exposure to diversity at the .05 level (see Table 3.8).

The results revealed that participants (global and experimental samples) who reported extensive experience with diversity reached the highest IAO scores. The IAO scores of the participants who reported medium experience - implying regular exposure to diversity - scored significantly lower on the IAO scale, when compared to those with extensive experience. Thus, in order to appreciate differences, it seems that the quality component of exposure (e.g., friendships or a partner from a different culture) should be added to the quantity of exposure (e.g., abroad exchange program, at work).

Two-way ANOVAs indicated that it is the amount and quality of exposure to diversity ($p<1.0e-14$) that predict IAO scores the best rather than participants' gender ($p<.001$). A Post-Hoc analysis (Tukey HSD) revealed almost no difference between male and female participants reporting extensive experience with diversity in terms of their attitude toward diversity ($p=.99$). Even with medium exposure to diversity, males did not significantly differ from their counterparts ($p=.70$).

Table 3.8: IAO Mean and Standard Deviation according to Experience Type

	Little Exposure	Medium Exposure	Extensive Exposure
Global Sample	4.31 (.90)	4.85 (.92)	5.30 (.86)
Experimental Sample	4.07 (.73)	4.56 (.86)	4.86 (.66)
Total	4.19 (.81)	4.70 (.89)	5.08 (.76)

Prediction (11) [EXPLOR]: Language Acquisition & IAO

Participants reporting a higher amount of spoken languages will demonstrate a better attitude toward diversity than participants reporting knowing less languages. In comparison to participants who speak one or two languages (M=4.59, SD=1.00), participants who speak more than two languages (M=4.84, SD=.94) scored significantly higher on the IAO scale ($F(1,1341) = 23.658$, $p<.001$). The same finding was replicated with the experimental study sample ($F(1,247) = 18.126$, $p<.001$) (see Table 3.9). A subsequent analysis (Tukey HSD) revealed no significant difference in IAO scores between men and women speaking more than two languages (p=.23).

Table 3.9: IAO Mean and Standard Deviation according to Language Aptitude

	1 or 2 Languages	3 or 4 Languages
Global Sample	4.59 (1.00)	4.84 (0.94)
Experimental Sample	4.21 (0.84)	4.65 (0.79)

3.6 Additional Findings

Although the effects of individuals' cultural origin were not considered within the review of literature, some implications were discovered with respect to the origin variable (main group versus sub-group identity), which emerged from participants' responses to QR20 (I do not feel I am a member of any particular culture; I feel I am something else). Participants who identified themselves as sub-group members felt significantly less bounded to any specific culture, when compared to participants with main group identity ($F(1,1336) = 23.503$, $p<.004$). However, the two identity types did not significantly differ on the attitude toward diversity ($F(1,1244) = 2.353$, $p=.125$).

Another finding relates to language aptitude. In both studies, female participants reported speaking more languages than male participants (see Table 3.10). Pearson's chi-square test was run to determine whether this difference was due to chance. The result showed that females speak significantly more languages than males ($\chi^2(1) = 24.681$, $p<.001$).

Table 3.10: Language Aptitude according to Gender (in %)

	1 or 2 languages	3 or 4 languages	**Total**
Male	49.8	50.2	100
Female	37.3	62.7	100

Furthermore, participants who speak three or four languages (both e-questionnaire and experimental study samples combined) have proportionally reported more and intenser exposure to diversity, when compared to those speaking one or two languages (see Table 3.11).

Table 3.11: Language Aptitude according to Diversity Exposure (in %)

	Little Exposure	Medium Exposure	Extensive Exposure
1 or 2 Languages	54.2	42.2	26.3
3 or 4 Languages	45.8	57.8	73.7
Total	100	100	100

Moreover, participants from the e-questionnaire sample who mentioned speaking three or four languages reported being significantly less confused when hearing someone speaking their native language with mistakes (IAO item 14), when compared to participants who speak one or two languages ($F(1,1564) = 62.033$, $p<.001$). However, this finding was not replicated by the experimental study sample ($F(1,247) = .668$, $p=.415$). Participants from the experimental study sample consisting exclusively out of college students felt on average significantly more confused when hearing their native language being spoken with mistakes than the students from the global e-questionnaire ($F(1,471) = 37.469$, $p<.001$).

To verify the relationship between participants' age and attitude toward diversity, the age distribution of both study samples were analyzed. The mean age was 36.05 ranging between 15 and 82 years. Combined into one sample, the data was non-normally distributed (Kolmogorov-Smirnov test was significant at $p<.001$) with a strong right skew (skewness 0.748; kurtosis -0.336) due to the high number of younger participants. Thus, Spearman's ρ non-parametric method has been adopted to verify the correlation. When aggregated, the samples revealed no relationship between the two variables: $\rho=.056$, $p<.05$, (two-tailed). This finding is not consistent with other studies (e.g., Landrum et al., 2000; Von Hippel et al., 2000), which demonstrated age to be related with attitude toward diversity. These studies specifically showed that older people tend to have a less positive attitude toward diverse others.

3.7 Discussion

According to Allport (1985), social psychology examines how human behavior and judgment are affected by "the actual, imagined, or implied presence of others" (p.3). Members of workgroups across the globe have different perceptions regarding their colleagues. In the current explorative study, I discovered that perception of others is the result of measurable behaviors (e.g., having friendship with people from different countries, learning foreign languages). The findings of the explorative study illustrated how exposure to diversity, language aptitude, and focus on human characteristics relate to attitude toward diversity, which mirrors perception of different others. It would not be correct to postulate that females by nature have a better attitude toward diversity than males. Men who speak as many languages and have as much experience with diversity as women scored about equally on the IAO scale.

Prior to the investigation of performance in diverse workgroups (experimental study), an understanding on how individuals with different cultural backgrounds may be perceived by members of a group they have to work with was gained. Someone's attitude toward diverse others might be decisive even in considering the future survival of an organization. Today's organizations are more and more confronted with having to explore and combine humans' diverse capabilities and talents via effective communication in order to solve complicated environmental, social and economical problems.

Time, in which power has often been used to simply enter a land and easily satisfy business wishes, may soon change. This may happen as monetary centers are becoming rather volatile than stabile. In short, the value of a positive attitude and experience dealing with different cultures has never been as high as today and will increase in the near future. Nations, which once had no choice but to conform, have now more confidence to say "no" and look for the partners of their choice. Short intercultural weekend seminars will soon not be enough to prepare a manager to lead quick and rewarding business in China or Russia. Factors displayed in Figure 3.1 revealed to be related with one another in measurable ways: a better attitude toward diversity appeared to be a consequence of **(1)** a high level of exposure to diverse others, **(2)** perception of others in terms of deep-level information and **(3)** a greater amount of spoken languages. Moreover, there is evidence on how diversity exposure affects the focus on human characteristics as well as language aptitude.

When controlling for each of the predictors separately, partial correlation analyses revealed to support the relationships presented in the above model. Contrary to other investigated factors (e.g., gender, occupation), exposure to diversity, focus on human characteristics and language aptitude predominantly unveiled to be the source of a more negative or positive attitude toward diversity. With regard to these findings, the relationships presented above should not be disregarded by companies wishing to find professionals in charge of working out demanding and ambiguous interactions across the globe. The effects of the discussed factors on workgroup process and performance will be examined within the scope of the

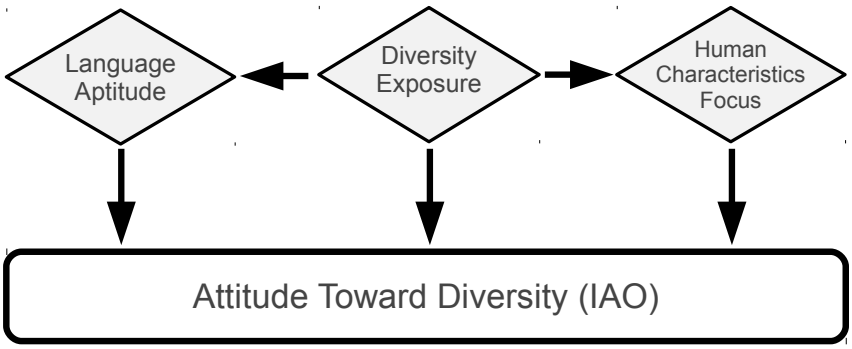

Figure 3.1: The IAO Predictors Model

experimental study presented in the next chapter.

3.8 Limitation and Future Research

Investigating attitude toward diversity on a worldwide scale is bounded with difficulties. About ninety percent of the individuals I contacted chose not to reply to the e-questionnaire. To maximize the participation rate, the e-questionnaire was made as short as possible without leaving out important information. Though, few items showed an acceptable reliability. Even if the evaluation of the IAO scale scores replicated findings collected by well established assessment tools employed in social psychology (e.g., The Campus Diversity Questionnaire-Revised), the IAO questionnaire still leaves a margin for improvement, specifically in order to raise its alpha coefficient of reliability.

Additionally, due to the explorative nature of the e-questionnaire, the analysis and evaluation of qualitative data were quite time-consuming. Thus, the IAO questionnaire should also be enhanced in this regard.

4 Experimental Study

Hendrick (1986) claims that similarly to individuals, organizations as a whole are only able to survive if they adapt to their environments. Specifically, they must continually accomodate to political, economic, social, and technological changes (Banks et al., 2001). Sgroi (2006) surveyed hundred fifty companies and interviewed more than eighty business leaders. She concluded that organizations are going to encounter "an environment of extreme cognitive complexity ... requiring extraordinary strategic thinking skills and the ability to make high-quality decisions quickly in the face of competitive pressures and uncertainty" (p.8). Such challenges exceed the capabilities of single employees and may be overcome only in groups (Paris et al., 2000). According to Guzzo and Shea (1992), working in groups appears to be more and more the norm in toady's organizations, yet working effectively together is one of their greatest challenges.

Regarding the structure and the purpose of organizational groups, literature distinguishes between teams and workgroups (e.g., Katzenbach & Smith, 1993). While teams are often created to work on long-run projects, workgroups are particularly suited for short-term tasks. Typically, teams have someone who is designated to lead and coordinate members (Zenger et al., 1994). Long-run efficacy of teams may appear only after their members went through specific development stages (e.g., Tuckman & Jensen, 1977; Worchel, 1994). On the other side, workgroups are often self-directed. They are set to complete unbounded and specific tasks. Soon after members have met, task group interaction is affected by how everyone is appearing, communicating, and acting. Time is an important factor, because emotional fit among members has to be well-balanced and occur quickly. Results may be fruitful, if everyone's abilities and strengths are fully explored and considered. In order for both of these actions to occur, workgroup members have to share information, views, and insights (Katzenbach & Smith, 1993). Workgroup effectiveness greatly depends upon the extent to which each member helps others and builds upon voiced suggestions (Podsakoff et al., 1997), thus decreasing process loss (Steiner, 1972). Another main challenge for workgroup effectiveness is to overcome tensions among workgroup members caused by real or perceived human differences (Thomas, 1992; Wall & Callister, 1995). Therefore, workgroup members shall neither perform with an "habitual routine" nor with a "cognition saving" state of mind. According to Schippers et al. (2003), complex and novel tasks require from each member reflection, discussion, and constant adaptiveness.

4.1 Need for an Experiment with Self-Directed Workgroups

As individuals become more mobile and the world is facing more unpredictable events (e.g., natural, social, economical, etc.), companies need to recruit members able to quickly adjust to new environments. They have to possess the ability to evolve on novel and ambiguous projects. Organizational success is often accomplished through the adaptive behavior of the workgroup members.

Investigating the effects of members' perception of human differences on workgroup performance has become a new area supported by research. In fact, group process (e.g., how do members get along with one another while working) mediates between demographical composition and outcomes (e.g., Jehn et al., 1999; O'Reilly et al., 1989; Pelled, 1996). Specifically, negative perceptions of racial dissimilarities may disrupt communication among workgroup members, which in turn limits achievement of group potential (Amason & Sapienza, 1997) as cited in Stewart & Garcia-Prieto (2008).

Work within demographically heterogeneous groups may lead some members to feel less comfortable to agree with individuals they dislike (Heider, 1958). On the other side, work within demographically homogeneous groups may lead members to expect others' opinions and perspectives to be similar to their own (Jost et al., 1998). Nevertheless, if members experienced a similar socialization (e.g., three males or females sharing the same ethnicity as well as similar age), opinions and perspectives are probably going to be similar. In diverse workgroups on the other side, Portero-Brown (2000) suggests that members' ability to take advantage of others' perspectives depends upon their reaction toward demographical differences.

The fact of investigating specific characteristics (e.g., attitudes, experience, etc.) under different experimental conditions should allow us to find out which workgroups are able to reach the best of their potential (i.e., make effective usage of different knowledge and perspectives). In this regard, whether attitude toward differences mediates effective decision-making should be investigated, specifically when members are confronted with opinions and perspectives coming from colleagues who differ in gender and/or nationality.

When taking into consideration the inquiries formulated in the theoretical part of the current investigation, a laboratory experiment was designed and conducted with college students in order to understand the impact different factors may have on group performance and group potential achievement. Specifically, the purpose of this experimental study was to inquire into the effect of information diversity on group performance **(research question 5)**, the effect of group members' satisfaction on group performance **(research question 2)**, the effect of members' different work-style on group performance **(prediction 4)**, the effect of members' cooperation on group performance **(prediction 3)**, the effect of members' attitude toward diversity on group performance **(prediction 13)**, the effect of members' preference for colleagues on group performance **(prediction 8)**, the effect of members' foreign language proficiency on group performance **(prediction 12)**, the effect of members' social dominance orientation on group performance

(research question 15) as well as the effect of members' diversity exposure on group performance **(prediction 10)**. Since the participants of the explorative study were not asked to fill out the SDO questionnaire, the relationship between IAO and SDO was addressed in the scope of the experimental sample **(research question 16)**. Furthermore, the experiment also aimed to investigate the prediction regarding the influence groups' demographical composition might have on members' satisfaction **(prediction 1)**.

4.2 Sample

One issue to be taken into account while planning an experiment is to assure the size of samples. For 2 X 2 factorial analyses (see experimental design on page 78), a large size effect at the .05 level of significance requires about 14 groups in each of the four cells (J. Bortz and N. Döring, 2003, p.616), that is 56 in total. Thus, when set into triads, about 168 participants are optimally required for such an experiment. As shown in Mohammed and Angell (2004) as well as O'Reilly, Williams, and Barsade (1997), gaining the expected number of same size groups is not an easy task.

Although I attempted to set exclusively triads, the simple nature of classroom size forced me, in some instances (eight out of sixty-five groups), to end up with dyads. Including the control groups (N=11), the whole experiment involved 76 workgroups.

Participant recruiting took place between January and December 2006. It was a difficult and lengthy process. About 95% of all participants (students) agreed to take part in the study after their professors had received my request via unsolicited emails. Less than 5% of the samples were recruited by means of campus flyers (see appendix E3 on page 167). Prior to each experimental session, I emphasized that participation was voluntary. In two extreme instances, about half of the students left the classroom at this moment. Altogether, participants were recruited at four different higher education institutions all of which are located in the Berlin area (Germany). All participants spoke German fluently, although for many of them it was their second or third language. The experimental sample as a whole included students with different academic years as well as different academic majors. No more than two students majored in psychology, which is a field of study where students are often subjects in various experiments and thus became sensitized toward their purposes.

Population Characteristics. In comparison to the explorative sample (e-questionnaire participants), the experimental sample consisted exclusively of college students (see Table 4.1). When compared with the global e-questionnaire participants (N=1099, M=40.95, SD=12.91), the experiment participants were much younger (N=248, M=25.58, SD=5.31). It should be pointed out that college students who participated in the global e-questionnaire (N=221, M=4.76, SD=.96) averaged significantly higher IAO scores than college students (N=249, M=4.49, SD=.82) who participated in the experiment ($F(1,471) = 11.227$, p=.001). One

reason for this difference might be a sampling issue. The experimental sample consisted mainly of one nation, whereas the global sample reflected participation from many different countries. Furthermore, the participants of the experiment took the paper-based IAO questionnaire, whereas the explorative study participants took it digitally. The experimental sample might have taken less time to fill out the survey.

Table 4.1: Description of participants' demographical characteristics

Country of Origin	**Gender**	**TOTAL**
Bulgaria	0 / 9	9
Cote d'Ivoire	0 / 1	1
France	1 / 6	7
Germany	88 / 101	189
Hong Kong	0 / 1	1
Hungary	0 / 2	2
India	1 / 0	1
Italy	1 / 1	2
Kazakhstan	0 / 1	1
Latvia	1 / 0	1
Poland	1 / 3	4
Republic of Korea	2 / 1	3
Romania	0 / 2	2
Russian Federation	2 / 7	9
Serbia	1 / 1	2
Spain	1 / 2	3
Turkey	3 / 9	12
TOTAL	102 / 147	249

Note. The slash contrasts between male and female participants.

4.3 Task Description and Relevancy

The type of task suggested for this experiment is primarily based upon an information processing perspective (Brauner & Scholl, 2000). Distance estimation between 14 cities spread across the globe (see appendix C1 on page 151) was defined as the task to be performed, because it implies aspects such as interaction, cooperation, and decision making. In addition, it simulates an environment to be found in any professional setting. The task behaviors generated by the suggested assignment are comparable with business activities involving self-managed workgroups. It means each workgroup is given the whole authority and responsibility for the task to be accomplished, with no assigned leader. In fact, distance estimation is used in various fields of work and is often bounded with time pressure as well as high responsibility (e.g., controller in an airport tower).

In order to simulate natural cognitive diversity, participants have been provided with map sketches containing either similar or different information. They had to demonstrate spacial awareness aptitudes (Cornoldi & McDaniel, 1991) as well as ability to mentally represent conceptual drawings and associate them with the real world (Pylyshyn, 1981). Participants were unaware of the requested assignment and it is unlikely that anyone had pre-conceived knowledge in the field of distance estimation. In fact, best distance estimation requires specific training (Sanjeeb, 2005) or each asked distance should have been regularly traveled in the past (Jacobson et al., 2001).

As already introduced, distance estimation is relevant in fields such as aviation (Muthard & Wickens, 2001) or military strategizing (Sanjeeb, 2005). In either military or public sector, distance estimation mistakes may result in great fatalities. "For the task of flight control, this deviation estimate is used to determine the urgency with which path deviations should be corrected. For flight planning, the estimate is used to assess the risk of a flight path and subsequently in flight plan selection. Sometimes distance can be used as a surrogate to estimate time, which may be the function variable of greatest importance (e.g., time-to-contact)" (Muthard & Wickens, 2005, p.10). In this field of work, the ability to make good estimations is directly bounded with decision-making (Muthard & Wickens, 2005).

The suggested task requires considerable cognitive effort, because "a true computational estimate of distance involves converting a display distance (measured in centimeters or pixels) to a world distance (measured in meters or miles), by dividing (explicitly or implicitly) the display distance by the map scale" (Muthard & Wickens, 2005, p.10).

Similar information processing has been observed by visually impaired individuals. Similar to figuring out reality from a map, visually impaired individuals have to make spatial inferences regarding distances that have not been previously taken (Rieser et al., 1980).

Estimation inaccuracies may easily occur, because individuals often use available distance information (e.g., on a screen) as a substitute for real distances. Specifically, when a distance is portrayed on a small display, it tends to be estimated smaller than in reality (Muthard & Wickens, 2005). Similarly, Jones (2004)

discovered that humans tend to overestimate short distances.

In several experiments, Casasanto (2007) discovered that individuals differ on how they perceive distances. The structure of underlying mental representations differs across individuals according to their native languages, which in turn affects how non-linguistic and perceptuo-motor tasks are performed (Casasanto, 2007). "Members of different language communities develop different distinctive conceptual repertoires" (Casasanto, 2007, p.22) and thus differ on how they communicate distance perceptions. The suggested factors add complexity to decision making process involving distance approximation, when at least one group member has a different native language. Though, a different perception should add accuracy to discussion on what may be the most correct distance between two cities.

4.4 Experimental Design

A 2 X 2 analysis of variance with information as first factor (similar information versus diverse information) and group demographical composition as second factor (nationally homogeneous versus nationally heterogeneous workgroups) was performed on distance estimation scores (see Table 4.2). The same design was also run with gender homogeneity versus gender heterogeneity as second factor (see Table 4.3). Outcome variables were measures of performance (i.e., group performance and group potential achievement). In order to measure participants' attitude toward human differences, two pre-tests (IAO and SDO questionnaires) were administrated. Group process was subjectively measured by means of a post-experiment questionnaire (six questions intending to measure members' satisfaction, perception of cooperation, perception of others' work-style).

A pilot study including 11 triads was led prior to the main experiment. This sample was randomly formed out of my students (Introduction to Research Methods in Social and Business Communication). The workgroups performed without receiving any information package. The fact of not having any information available led me to use this sample as a control group (see Table 4.6 and Table 4.7). In addition, the pre-test results (IAO and SDO) have been included within individuals' analyses, but excluded from any experimental statistics. The answers to the post-test questions were not included in any statistical analyses, because the post-test questions have been modified for the main experiment.

Table 4.2: Description of the Experiment (Workgroup Composition X Information Diversity)

	Similar Information	Different Information	**Total**
Same Nation	17	15	35
Mixed Nations	19	14	33
Total	36	29	65

Note. National homogeneity or heterogeneity occurred naturally via randomized group sampling.

Table 4.3: Description of the Experiment (Workgroup Composition X Information Diversity)

	Similar Information	Different Information	**Total**
Same Gender	19	12	31
Mixed Gender	17	17	34
Total	36	29	65

Note. Gender homogeneity or heterogeneity occurred naturally via randomized group sampling.

4.5 Procedures

The current experiment closely followed procedures as published in Small Group Research. The experiment was broken into different stages (see Table 4.4). Participants were unaware that Gender, Nationality as well as Information Diversity were experimental factors (see similar procedures in Daily & Steiner, 1998). The places in which the experimental sessions took place were standard university classrooms. All of them had a similar size and were similarly equipped (i.e., minimum a table for each workgroup).

After having welcomed the participants and shortly introduced myself as well as the purpose of the experiment, I distributed the information packages to everyone. Note that the packages were previously coded and randomly mixed so that neither I nor the participants knew whom they had to work with. Participants were given about 5 minutes to read the introduction sheet (see appendix C1, p.148). A jar of chocolate bars and soft jelly candies was passed around during the first phase of the experiment. Each participant had equal chance to fall within any "cell" of the factorial design. During the session, the experimenter sat in front of the class. Although many requested "distance hints", no help was provided. Participants were not allowed to use any tools (e.g., cellular phone) other than the material provided.

After the two questionnaires (IAO and SDO) had been answered, participants were given some time to individually estimate the distance between the suggested cities. On each questionnaire, a code was provided (e.g., *member (B) group (2)*, see appendix C1, p.152). Then, participants were asked to find their new colleagues (i.e., matching code: e.g., *member (A) group (2)*). At this point, they were asked to share his or her individual estimations, discuss them and provide answers at the group level. After distance decisions were made, each member took a couple more minutes to fill out the post-questionnaire (see appendix C1, p.153). The overall experiment took on average between 50 and 60 minutes. A motivational trigger was used. Prior to the start of the experiment, participants were informed that best individual answers would be rewarded with a movie ticket. Members of the best workgroup would receive the same reward as well.

Table 4.4: Experimental Procedures

Pre-test (phase 1)	**Experimental Task (phase 2)**			**Post-test (phase 3)**
IAO & SDO	Individual	Information	Group	Group Process
Questionnaire	Distance	Sharing &	Distance	Oriented
	Estimations	Discussion	Estimations	Questionnaire

4.6 Measures

Information Manipulation. The first independent variable has been manipulated by randomly setting participants into workgroups (triads) which were provided with either information packages containing similar (N=35) or different information (N=29) (see Table 4.5). Members of the groups which received similar information packages had similar map sketches of the world to work with. On the other hand, members of the groups having received different information packages (artificial diversity) had a greater amount of separated information to share with one another (see appendices D1-D6, pages 159-164). With respect to the experimental design, groups which received different information packages may outperform groups having received similar information packages only if their members demonstrate the ability to effectively exchange as well as associate separated information.

Table 4.5: Experimental Information Manipulation Design

Regions of the World	Similar Information	Diverse Information
A1	E1,E2,E3,NA1,SA1	
B1	E1,E2,E3,SA1,A1	
C1	E1,E2,E3,A1,NA1	
A2		E1,NA1,NA2,NA3,SA1
B2		E2,SA1,SA2,SA3,A1
C2		E3,A1,A2,A3,NA1

Note. Information packages are available in appendices D1-D6. Each code (e.g., E1) represents a different region of the world.

Pre-test measure / Intercultural Attitude Orientation [IAO]. As elaborated in the previous explorative study, eight items of the e-questionnaire have been validated for the construction of a final scale (N=1351, M=4.74, SD=.98, α=.70), which also has been replicated by the workgroup experiment (N=249, M=4.49, SD=.86, α=.70). Each item was rated on a 7-point Likert scale ranging from -3 (strongly disagree) to 3 (strongly agree) respectively. The higher the scores, the better the attitude toward diversity. In order to see whether IAO has an effect on performance, the scores of the group members were averaged at the group level. Aggregated at group level, it was labeled [IAOGROUP].

Pre-test measure / Social Dominance Orientation [SDO]. This measure is derived from the research of Pratto et al. (1994). The German version of the SDO (Six et al., 2001) was used in the current experiment (N=249, M=2.84, SD=.92, α=.84). The scale contains 16 items. Each had to be rated on a 7-point Likert scale ranging from 1 (Strongly Disagree / Disapprove) to 7 (Strongly Agree / Favor) respectively. Questions 8 through 16 were to be reverse coded. The higher the scores, the more predisposition to demonstrate dominance. In order to see whether SDO has an effect on performance, the scores of the group members

were averaged at the group level. This measure was then inserted into the statistical model as a covariate. Aggregated at group level, it was labeled [SDOGROUP].

Pre-test measure / Quantity and Quality of Experience with Diversity [EXPOSURE]. This measure sources from the explorative study. From the coded data of the explorative study, three final categories revealing the quality and quantity of exposure to diversity had emerged. In the experimental study (control groups not included), 61 participants disclosed little exposure to diversity, 73 participants self-reported a medium level of exposure, and 56 claimed to have extensive experience with diversity. Literature on diversity predicted that group members' previous exposure to different cultures may facilitate work in diverse environments. In fact, both the explorative and the experimental study revealed a correlation between exposure and attitude toward diversity. In order to see whether the level of experience with diversity has an effect on performance, the scores of the group members were averaged at the group level. This measure was then inserted into the statistical model as a covariate. Aggregated at group level, it was named [GROUPEXPOSURE].

Pre-test measure / Foreign Language Aptitude [FORLANG]. This measure sources from the explorative study. From the coded data of the explorative study, two final categories revealing participants' language aptitude were formed. In the experimental study (pilot study not included), 61 participants self-reported to speak one or two languages, while 125 mentioned speaking three to four languages. In order to see whether members' amount of spoken languages has an effect on performance and/or potential achievement, the scores of the group members were averaged at the group level. This measure was then inserted into the statistical model as a covariate. Aggregated at group level, it was labeled [GROUPFORLANG].

Pre-test measure / Focus on Human Characteristics [FOCUS]. This measure sources from the explorative study. After the analysis of the data gathered in the explorative study, two categories revealing the way participants disclosed their preferences for colleagues were subsequently formed. Within the experimental sample, 104 participants disclosed that they would choose colleagues according to their culture of origin and/or nationality and 86 wrote that colleagues' personality and/or skills mattered the most or reported having no preferences when choosing colleagues. In order to see whether workgroups whose members on average focus more on deep-level characteristics or report no preference work together more effectively than workgroups with members focusing on human surface characteristics, the scores of the group members were averaged at the group level. This measure was then inserted into the statistical model as a covariate. Aggregated at group level, it was named [GROUPFOCUS].

Workgroup Performance [GROUPPERF]. This measure is quite straightforward and results in actual calculated distances. Participants had to first provide

the distance estimations individually prior to meeting their randomly assigned colleagues. Then, they had to share their individual answers as well as information they received in order to reach a group answer. This measure represents the average of answer accuracy (i.e., how close is the estimation to the correct answer) calculated for each group. The lower the calculated percentage was, the closer group answers were to the correct distance (i.e., high performance). Formula used to calculate group performance (i.e., answer accuracy) is below (also available in appendix A1 on page 139):

$$Group\ Performance : GP = \frac{\sum_{i=1}^{14} y_i}{14},\ i - number\ of\ questions\ (i \in [1, ..., 14]),$$

$$y_i = \frac{(|GA - CD| \cdot 100\%)}{CD},\ GA - Group\ Answer,\ CD - Correct\ Distance$$

Workgroup Potential [GROUPPOTENTIAL]. There are different methods which scholars have adopted in order to measure group potential. For instance, group potency (Guzzo et al., 1993) and group efficacy (Salanova et al., 2003; Schaubroeck et al., 2000) use self-reported measures describing members' perception on how effectively their groups were accomplishing a task (Parker, 1994). According to Jung and Sosik (2003), several authors have successfully demonstrated how perception of group performance relates to actual performance in various fields of work.

On the other side, one of the most objective ideas used to sense group potential roots in Steiner's (1972) "potential productivity baseline". His concept assumes that members' resources may be artificially combined in order to find out about the group's optimal level of performance. Difference between the best individual answers provided prior to group discussion and the actual correct answers directly reflects group potential in a disjunctive task (Steiner, 1972). Such a baseline is necessary in order to see whether "groups are achieving, exceeding, or falling short of any reasonable expected level of performance" (Kerr & Tindale, 2004, p.625). In the current study, group potential refers to the objective and systematic difference between the most accurate individual answer (estimated distance) and the correct answer calculated for every question and averaged at the group level. Even though distance estimation also contains elements of a compensatory task, it is mainly a disjunctive task where results depend upon the likelihood that the most competent group members will contribute to the final solution.

$$Group\ Potential : GP = \frac{\sum_{i=1}^{14} y_i}{14},\ i - number\ of\ questions\ (i \in [1, ..., 14]),$$

$$y_i = \frac{(|BIA - CD| \cdot 100\%)}{CD},\ BIA - Best\ Individual\ Answer,$$

$$CD - Correct\ Distance$$

Workgroup Potential Achievement [GROUPPOTACHIEV]. This measure was meant to find out how the groups made usage of their actual potential. Workgroup potential achievement reflects how close the group's final answers are to the best distance approximations provided at the individual level prior to group discussion. It short, it represents the difference between the answers provided as a group and the most accurate answers provided at the individual level. Groups may achieve their potential, if their answers are the least apart from the best individual distance approximations. The formula used to calculate the workgroup potential achievement is below:

$$Group\ Potential\ Achievement : GPA = \frac{\sum_{i=1}^{14} y_i}{14},\ i - number\ of\ questions$$

$$(i \in [1, ..., 14]),\ y_i = \frac{(|GA - BIA| \cdot 100\%)}{BIA},\ GA - Group\ Answer,$$

$$BIA - Best\ Individual\ Answer$$

An example to illustrate a group's usage of its potential in the current experiment would be by asking three individuals what is the distance between Chicago and Montreal. Individual A estimates it at 1000 km, individual B at 2000 km, and individual C at 2500 km prior to group discussion. If after discussion all three agreed that 1300 km would be about right and 1202 km is the correct answer, then the group showed a quite effective usage of its potential (i.e., recognized via effective exchange of information and cues that individual A laid the least wrong).

According to Blamey, McCarthy and Smith (2000), there are more chances for a group to solve a problem "if it contains one or more individuals who solved it in isolation" (p.11). However, the perspective of these individuals should not be ignored by other group members. Groups failing to identify who possesses credible or relevant information is a clear instance of group process loss (Kerr & Tindale, 2004).

Some authors (e.g., Sniezek & Henry, 1989; Tindale & Sheffey, 2002) believe workgroup potential achievement to be a relevant measure of group performance because it represents more than the simple combination of members' individual answers. Though, the way for a group to outperform the simple combination of individual performances may not be easily achieved. According to Moreland and Argote (2003), this may be achieved in a long term when group members have been trained to work together and thus are able to reach transactive memory, which represents the mutual awareness of "who knows what". Being able to identify the most capable group member(s) (Henry, 1995) may be best achieved when members have been taught how to (Moreland & Myaskovsky, 2000).

Post-test Questionnaire. Six questions of the post-test, which purpose was to measure members' satisfaction, perception of cooperation, and perception of others' work-style, were asked to be rated on a 5-point Likert scale ranging from 1 (not at all) to 5 (extremely) respectively. One of the questions was qualitative, but thereafter coded and transformed into a categorical variable. The six questions measuring group process are illustrated below.

Satisfaction [SATIS]. Questions 15 and 18 had for intent to measure participants' satisfaction with their colleagues. The first question contained one item and the second one two items. The first question asked whether it was enjoyable to work within the group and the second question requested the participants to rate how much they liked other colleagues. Group average satisfaction with other colleagues was taken as a final score. Aggregated at group level, it was labeled [GROUPSATIS]. The Cronbach's alpha of the three-item scale was α=.78.

Cooperation [COOP]. Questions 16 and 17 had for intent to measure participants' perception of how their colleagues cooperated. Both questions contained two items each. The first question asked whether all members were willing to share their knowledge with the group and the second one was about how cooperative other colleagues were while discussing potential group answers. Group average perception of other colleagues' cooperation was taken as a final score. Aggregated at group level, it was labeled [GROUPCOOP]. The Cronbach's alpha of the four-item scale was α=.71.

Work-Style [WORKSTYLE]. Question 19 was formulated to measure how similar or different members perceived the working style of their colleagues. This question contained two items. Group average perception of other colleagues' work-style was taken as a final score. Aggregated at group level, it was named [GROUP-WORKSTYLE]. The Cronbach's alpha of the three-item scale was α=.85.

Socio-Emotional versus Task Orientation [REASONTOLIKE]. Question 20 was meant to sense the reason why participants liked or disliked their colleagues. The answers to this question have been classified into two categories. 64 participants disclosed liking or disliking their colleagues due to socio-emotional factors. The 80 other participants based their answers upon task-related factors. This measure was not aggregated at group level because of its nominal nature.

4.7 Results

Experiment Manipulation Check. The challenge of measuring workgroup performance is to make sure that the experimental design does not advantage some workgroups over others; that is, only group process and the quality of group decisions should contribute to difference across groups. An analysis of variance revealed that neither group of participants (receiving either similar or different information packages) was advantaged prior to making group decisions ($F(1,63) = 0.000$, $p=.994$). With regard to the individual answers provided by female participants, no significant difference was found when compared to the answers provided by male participants ($F(1,188) = 0.160$, $p=.690$). No significant difference was found between the answers of German and those of Non-German participants ($F(1,188) = 0.80$, $p=.778$), which also indicates that neither demographically homogeneous nor demographically heterogeneous workgroups were advantaged prior to meeting and discussing potential group answers ($F(1,63) = 0.53$, $p=.819$).

The pilot study workgroups (N=11) did not receive information packages; thus, their outcomes were used only for comparison purposes. As shown in Table 4.6 and Table 4.7, the performance scores from the pilot sample (control group) were significantly lower than the scores of the groups which received either similar or different information packages ($F(1,4) = 9.851$, $p=.001$).

Descriptive statistics. In the experimental sample, only one group was excluded from statistical analysis because many questions remained unanswered at the group level.

Two different outcome variables were analyzed: group performance and group potential achievement. Means and standard deviations of performance measures across different experimental conditions are presented in Table 4.6 and Table 4.7. Low means indicate high performance. In Model 1 and Model 2, the first factor was information diversity consisting of two levels: similar information versus diverse information. While the second factor in Model 1 was demographical composition consisting of national homogeneity versus national heterogeneity, the second factor in Model 2 was demographical composition consisting of gender homogeneity versus gender heterogeneity. Individual performance and group potential, which do not refer to group outcome per se, are displayed for comparison purposes.

Table 4.6: Descriptive Statistics for Outcomes of each Experimental Condition (Model 1)

PERFORMANCE MEASURES	CONTROL GR. NO INFO (a) (n=11)		NAT HOM SIM. INFO (b) (n=19)		NAT HET SIM. INFO (c) (n=17)		NAT HOM DIF. INFO (d) (n=12)		NAT HET DIF. INFO (e) (n=17)	
	M	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
Individual Performance	67.71	42.49	44.41	18.55	48.75	15.47	48.22	21.9	45.15	16.57
Group Potential	*NA*	*NA*	21.4	5.43	21.84	6.34	22.57	7.46	18.38	7.8
Group Performance	61.27	41.67	28.97	8.72	31.31	14.24	25.03	8.53	21.29	3.81
Group Potential Achievement	*NA*	*NA*	8.1	7.6	9.57	9.42	4.95	6.79	5.04	5.81

Note. (a) Control groups having no information available to perform. (b) Nationally homogeneous workgroups having similar information packages. (c) Nationally heterogeneous workgroups having similar information packages. (d) Nationally homogeneous workgroups having different information packages. (e) Nationally heterogeneous workgroups having different information packages.

Table 4.7: Descriptive Statistics for Outcomes of each Experimental Condition (Model 2)

PERFORMANCE MEASURES	CONTROL GR. NO INFO (a) (n=11)		GEND. HOM SIM. INFO (b) (n=17)		GEND. HET SIM. INFO (c) (n=19)		GEND. HOM DIF. INFO (d) (n=15)		GEND. HET DIF. INFO (e) (n=14)	
	M	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
Individual Performance	67.71	42.49	47.09	17.42	46.27	16.8	46.44	23.15	46.95	16.69
Group Potential	*NA*	*NA*	20.79	6.64	22.57	4.84	20.29	6.21	20.73	8.91
Group Performance	61.27	41.67	32.1	11.53	28.07	12.19	25.99	7.23	21.27	6
Group Potential Achievement	*NA*	*NA*	11.54	8.29	5.89	7.97	7.38	7.06	3.31	5.12

Note. (a) Control groups having no information available to perform. (b) Gender homogeneous workgroups having similar information packages. (c) Gender heterogeneous workgroups having similar information packages. (d) Gender homogeneous workgroups having different information packages. (e) Gender heterogeneous workgroups having different information packages.

In general across all experimental conditions, groups demonstrated difficulties in achieving their potential when provided with similar information packages.

The Spearman's rank correlation coefficient was calculated in order to determine whether there were any relationships between group demographical composition, information diversity and measures of performance (see Table 4.8).

Table 4.8: Spearman's ρ correlation among Group Outcomes, Group Composition and Information

	Group Performance	Group Potential Achievement
Information Diversity	-.320**	-.247**
National Diversity	-.107	.080
Gender Diversity	-.300*	-.384**

Note. **p<.01, *p<.05 (two-tailed).

As displayed above, Spearman's index points to a significant (p=.009) negative medium correlation (ρ=-.320) between information diversity and group performance, which corresponds with the intention of the experiment to affirm that groups possessing diverse task-related information will perform better than groups possessing similar information. No relationship was found between national diversity and measures of performance. However, a significant (p=.001) negative medium correlation (ρ=-.384) was revealed between gender group composition and group potential achievement.

Intercorrelations among covariates and performance measures are presented in Table 4.9. Some of these relationships were not anticipated. I will report as well as try to explain each of them within the additional findings section.

Table 4.9: Pearson Correlation among Group Outcomes (1-2) and Covariates (3-10)

	1	2	3	4	5	6	7	8	9	10
1. [GROUPPERF](a)	–									
2. [GROUPPOTACHIEV](b)	-.821**	–								
3. [GROUPEXPOSURE](c)	-.268*	-.274*	–							
4. [GROUPFORLANG](d)	-.136	-.122	.579**	–						
5. [GROUPFOCUS](e)	-.030	-.110	.180	.130	–					
6. [GROUPSATIS](f)	.248*	-.172	-.051	.124	-.090	–				
7. [GROUPCOOP](g)	.180	.127	-.175	.013	-.050	.629**	–			
8. [GROUPWORKSTYLE](h)	.116	.151	-.113	-.254*	.000	-.055	-.220	–		
9. [IAOGROUP](i)	.107	-.104	.484**	.327**	.273*	.116	.094	-.165	–	
10.[SDOGROUP](j)	-.136	-.087	-.131	-.331**	-.080	-.344**	-.190	.235	-.258*	–

Note. **p<.01, *p<.05 (two-tailed). (a) Group Performance. (b) Group Potential Achievement. (c) Group Diversity Exposure. (d) Group Spoken Languages. (e) Group Focus on Human Characteristics. (f) Group Satisfaction. (g) Group Cooperation. (h) Group Work-Style. (i) Group IAO Scores. (j) Group SDO Scores.

Main Findings. In this section, it will be first examined by means of separated univariate analyses whether information diversity and group demographical composition (national or gender) have an effect on the two outcome variables: group performance and group potential achievement. Second, it will be tested whether a set of variables accounts for variance in the group outcomes. Measures referring to each of the variables - SDO group scores [SDOGROUP], group level of exposure to diversity [GROUPEXPOSURE], group averaged number of spoken languages [GROUPFORLANG], group average satisfaction [GROUPSATIS], perception of cooperation [GROUPCOOP], and others' work-style [GROUPWORKSTYLE] - have been entered stepwise into Model 1 and Model 2 as covariates. Along with evaluating statistical findings, predictions and research questions formulated in the theoretical part of the current study will be answered.

Univariate analyses revealed a main effect of information diversity on group performance for Model 1: ($F(1,61) = 7.848$, $p=.007$) and Model 2: ($F(1,61) = 6.788$, $p=.012$). That is, workgroups which received diverse information packages performed significantly better than workgroups which received similar information packages. This supports the idea that when groups are provided with task-relevant information, task process is alleviated and thus improves group outcomes Laughlin et al. (1969).

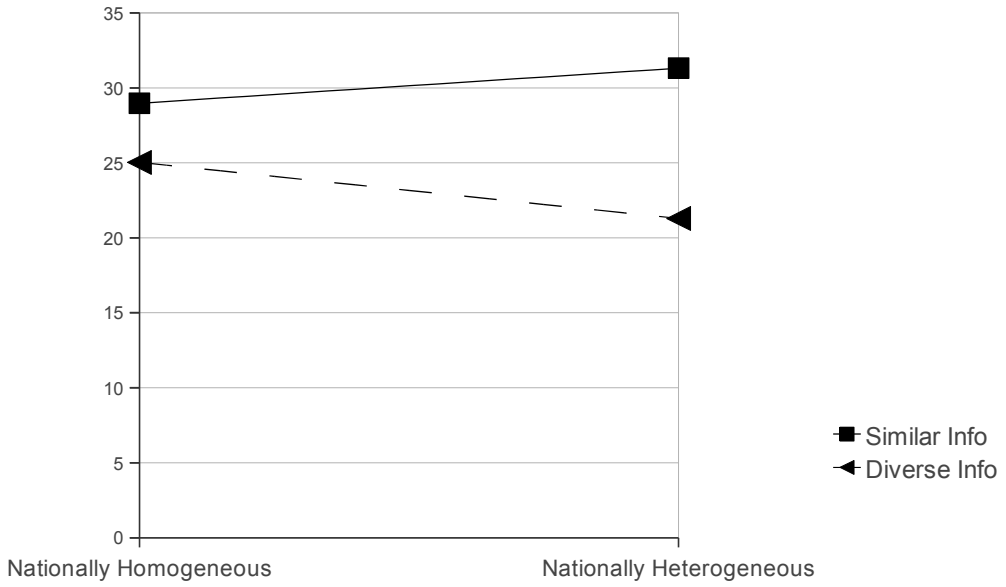

Figure 4.1: National Workgroup Composition X Information Diversity on Group Performance (Note. Low means indicate high group performance).

There were no main effects of group composition (gender or nationality) on group performance. However, when comparing decision-making quality across demographically homogeneous workgroups, Tukey HSD revealed that workgroups having received different information packages did not significantly differ in their

performance from workgroups whose members received similar information packages (see Figure 4.1 and Figure 4.2). The p-value for groups comprised of the same nation was as high as 0.34 and for groups comprised of the same gender 0.68.

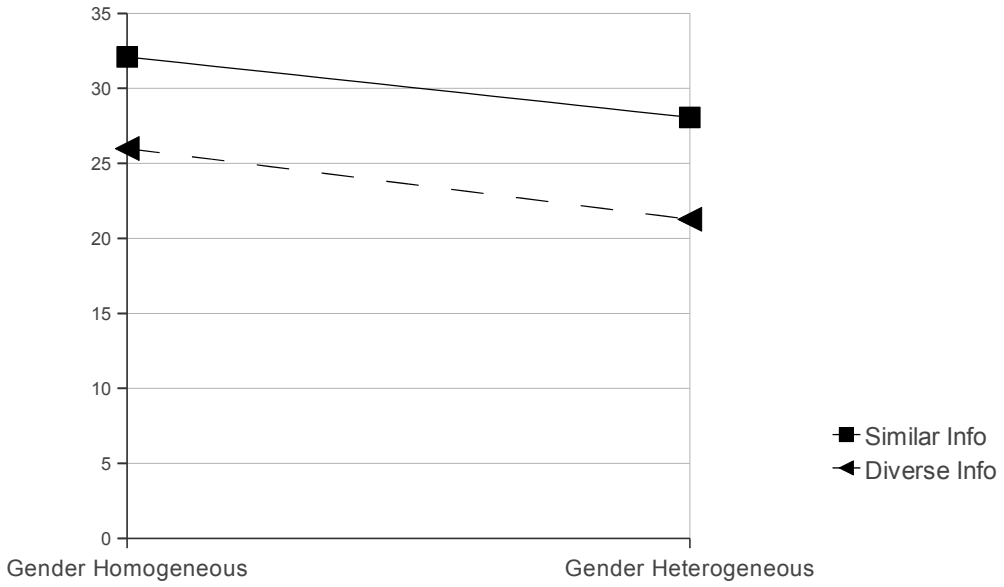

Figure 4.2: Gender Workgroup Composition X Information Diversity on Group Performance (Note. Low means indicate high group performance).

On the other hand, when exposed to different information, nationally heterogeneous workgroups performed significantly better than when exposed to similar information (p= .029) (see Figure 4.1). However, similarly to gender homogeneous workgroups, gender heterogeneous workgroups provided with diverse information packages did not perform significantly better than gender heterogeneous workgroups provided with similar information packages (p=.19) (see Figure 4.2). The above findings answer the following research question:

Research Question (5) [EXPERIM]: Info Diversity & Performance

Does information diversity benefit more demographically heterogeneous workgroups or demographically homogeneous workgroups? In fact, Bantel (1994) found that group demographical similarity relates to the lack of openness to new sources of information. In the current experiment, members of demographically homogeneous workgroups which received diverse information packages might have lack of assertiveness in disclosing independent information necessary to make effective distance estimations. Bowers, Pharmer, and Salas (2000) once predicted that demographically homogeneous workgroups may not perform well when tasks require dealing with a broad range of information.

Further, there was a main effect of gender group composition on group potential achievement ($F(1,61) = 7.061$, $p=.010$). Under either similar or different information condition, mixed gender groups managed to achieve their potential significantly better than groups composed of the same gender (see Figure 4.3). Following Steiner's concept (1972), groups that best achieved their potential are the very groups which endured the least process loss. In this regard, it may be deduced that gender heterogeneity significantly contributed to reducing group process loss.

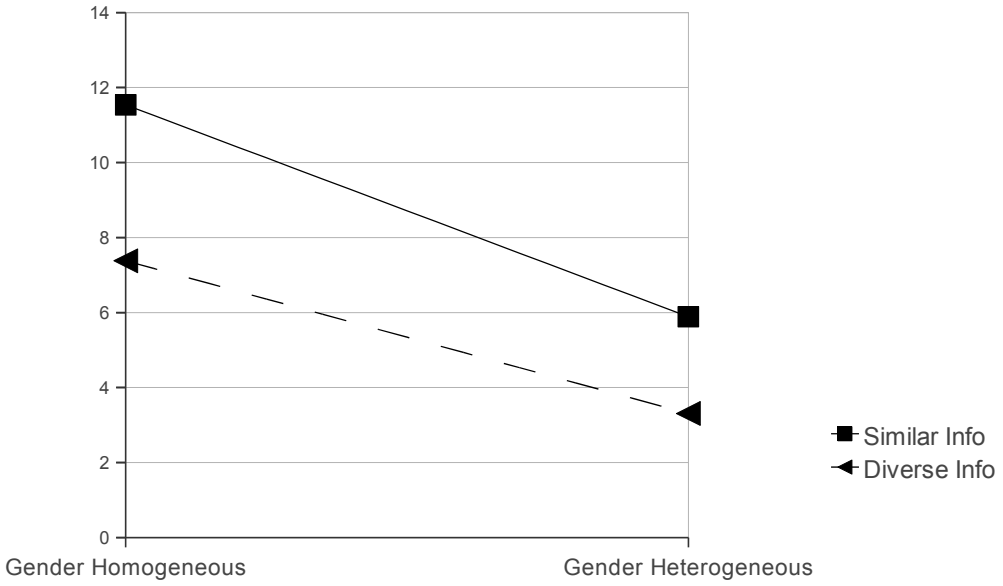

Figure 4.3: Gender Workgroup Composition X Information Diversity on Potential Achievement (Note. Low means indicate high group potential achievement)

Also Spearman's rho (ρ=-.384, p=.001, two-tailed) indicated that groups composed of mixed genders were better suited to reaching their potential (see Table 4.8). This suggests that the effect of gender diversity on group potential achievement is bounded to group process related variables. Taking a step further by examining gender differences with regard to attitude toward diversity and experience with diversity, female participants seemed to have a mediating role in groups whose members differed in nationality.

In the next part of the section, a set of predictions and research questions will be addressed and answered.

Prediction (1) [EXPERIM]: Satisfaction & Demographical Composition

When compared to the members of a demographically homogeneous workgroup, the members of a demographically heterogeneous workgroup will be less satisfied. Although the first school of thought suggests that

demographical differences may decrease members' satisfaction, ANOVA showed no significant differences between demographically homogeneous and demographically heterogeneous workgroups with regard to the satisfaction of group members with their group work experience ($F(1,63) = 1.278$, $p=.263$) (see Table 4.10).

However, when compared to their counterparts, female participants self-reported significantly more satisfaction with their workgroup experience ($F(1,179) = 4.522$, $p=.035$). Additionally, in same gender groups, females (N=50, M=4.61, SD=.48) were happier to work with other female members than males (N=40, M=4.29, SD=.59) with other male group members ($F(1,86) = 7.733$, $p=.007$). Further, majority group members (N= 47, M=4.26, SD=.71) expressed being significantly less satisfied working within demographically heterogeneous workgoups than minority members (international students) (N=45, M=4.48, SD=.48) ($F(1,90) = 3.171$, $p=.039$). These findings reveal similarity to literature on diversity arguing that mainly majority male members tend to devaluate work in diverse groups when compared to women and minority members.

Another interesting finding regarding members' satisfaction was that participants who reported speaking more than two languages (N=122, M=4.50, SD=.52) were significantly more satisfied with their workgroup experience ($F(1,179) = 8.468$, $p=.004$) than those who reported speaking one or two languages (N=59, M=4.24, SD=.66). This seems to be related to the finding I reported in the result part of the explorative study saying that female participants on average tend to speak more languages than male participants. Nevertheless, whether or not knowledge of more languages predicts group members' satisfaction should be further investigated. Such an effect may benefit any workplace.

Furthermore, members of workgroups with lower SDO group scores (i.e., tending to support social equality) showed to be more satisfied to work within a demographically heterogeneous environment on the requested task than members of workgroups with higher SDO group scores: $r=-.344$, $p=.0049$ (two-tailed). This finding suggests that the cause for not enjoying group work is merely related to SDO ($p=.006$) rather than gender ($p=.029$) or nationality ($p=.039$). Such a phenomenon should be considered by professionals when staffing new workgroups.

Table 4.10: Satisfaction Mean and Standard Deviation according to Demographics

Condition	Nationally Homogeneous		Nationally Heterogeneous		Gender Homogeneous		Gender Heterogeneous	
	M	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
Group Level	4.47	0.34	4.35	0.48	4.45	0.45	4.36	0.39
Male	4.39	.61	4.21	.64	4.29	.59	4.33	.66
Female	4.55	.42	4.46	.59	4.61	.48	4.39	.55

Research Question (2) [EXPERIM]: Satisfaction & Performance

Does members' satisfaction relate to workgroups' performance? When satisfaction [GROUPSATIS] was added as covariate to Model 1 and Model 2, no significant covariance between the covariate and group performance as well as group potential achievement was observed under either the national diversity condition or the gender diversity condition.

Nevertheless, Pearson bivariate analysis revealed a weak association of r=.248 (p=.0467) between members' reported satisfaction and workgroup performance. This indicated a slight tendency that groups with less satisfied members performed better than those with more satisfied members. Better performance implies that group members come up with a greater variety of alternative viewpoints, which in turn increases the chances for a dispute to occur. Thus, cognitive as well as emotional efforts bounded with debating may in one way improve the quality of answers and in another way decrease members' satisfaction.

Prediction (4) [EXPERIM]: Work-Style & Performance

Perception of differences in colleagues' work-style will negatively affect workgroup performance and workgroup potential achievement. With the exception of two workgroups, all other nationally heterogeneous groups had two (out of three) group members of the same nationality. Thus according to Earley and Mosakowski (2000), a new and common work-style might have not been created by the members of the nationally heterogeneous groups, since the work-style of the two members possibly dominated in the group.

After work-style [GROUPWORKSTYLE] was added as covariate to Model 1 and Model 2, no significant covariance between the covariate and group performance as well as group potential achievement was observed under either the national diversity condition (Model 1) or the gender diversity condition (Model 2).

Subsequently, [GROUPWORKSTYLE] was dichotomized into "perception of difference in colleagues' work-style" and "perception of similarity in colleagues' work-style" [WORKSTSIMDIF]. Groups consisting of members who reported the work-style of colleagues to be different from their own (N=33, M=2.19, SD=.50) significantly differed from groups with members perceiving the work-style of colleagues as similar (N=32, M=3.50, SD=.52) ($F(1,63) = 106.63$, $p<.00001$).

A 2 X 2 (National Diversity X Work-Style) factorial ANOVA was conducted on group performance and group potential achievement. There was a significant main effect of work-style on group potential achievement ($F(1,61) = 5.320$, $p=.024$) (see Table 4.11 and Figure 4.4). Both nationally homogeneous and nationally heterogeneous workgroups, in which members reported their colleagues' work-style to be similar to their own, achieved their potential significantly better than groups with members disclosing their colleagues' work-style being different. However, as for the test performed on group performance, there was neither a main effect for national diversity nor an interaction effect.

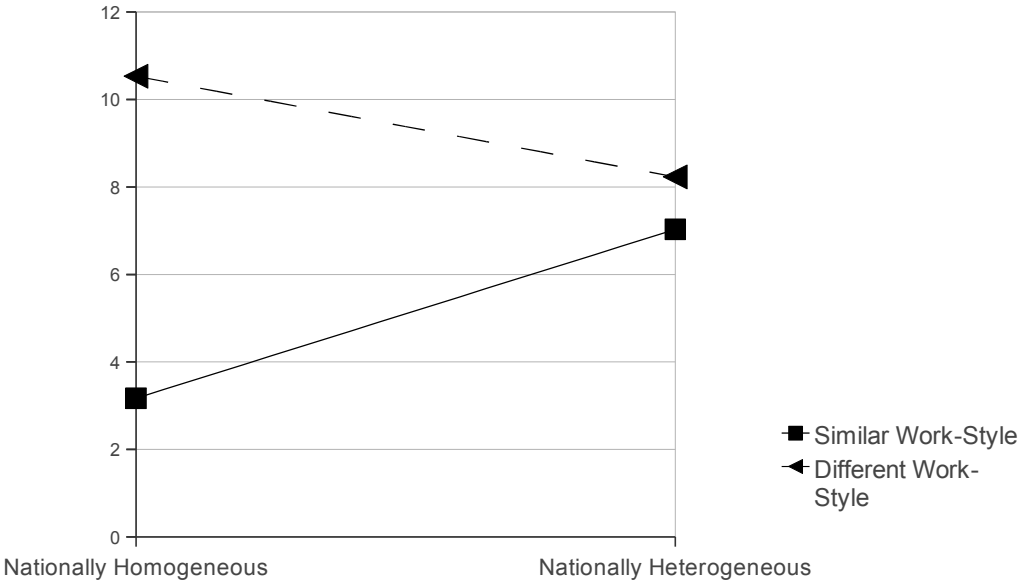

Figure 4.4: National Diversity X Work-Style Perception on Group Potential Achievement (Note. Low means indicate high group potential achievement).

Table 4.11: Work-Style Mean and Standard Deviation according to Demographics

Condition	Nationally Homogeneous		Nationally Heterogeneous		Gender Homogeneous		Gender Heterogeneous	
	M	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
Similar work-style	3.17	4.74	7.03	8.57	5.71	6.96	4.48	7.25
Different work-style	10.53	7.81	8.23	8.25	13.89	6.92	4.60	6.31

Furthermore, a 2 X 2 (Gender Diversity X Work-Style) factorial ANOVA was similarly conducted on group performance and group potential achievement. None of the factors revealed to be statistically significant, when the test was performed on group performance. However, a significant main effect was found for gender diversity ($F(1,61) = 9.217$, $p=.004$) and work-style ($F(1,61) = 6.062$, $p=.017$) on group potential achievement (see Table 4.11 and Figure 4.5). There was also a significant interaction effect between gender diversity and work-style ($F(1,61) = 5.362$, $p=.024$). Members of gender homogeneous workgroups perceiving their colleagues' work-style as different from their own had much more difficulties to reach their potential than members of gender heterogeneous workgroups under the same condition. Perception of difference in others' work-style did not show any effect on group potential achievement, when workgroups were gender heterogeneous. Demographical homogeneity is bounded with expectations such as similarity in work-style, views, perspectives, etc. When these expectations are not met, group process will be negatively affected. On the other side, members in demographical heterogeneous workgroups are aware of others' differences, and thus members' work-style is less a factor which may disrupt or enhance performance.

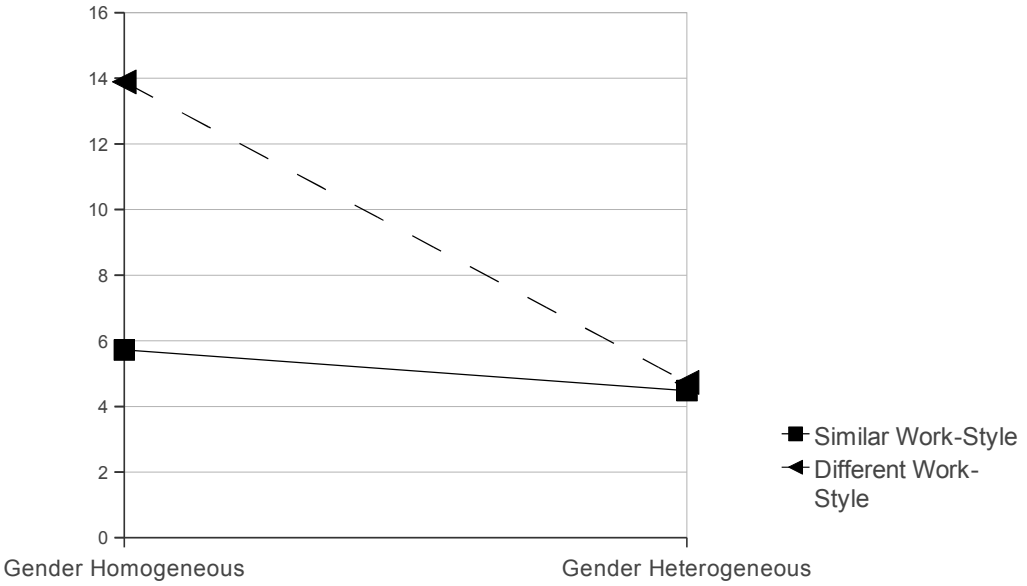

Figure 4.5: Gender Diversity X Work-Style Perception on Group Potential Achievement (Note. Low means indicate high group potential achievement).

An additional ANOVA showed that women perceived the work-style of their colleagues significantly less different from their own than men ($F(1,176) = 5.450$, $p= .021$). Moreover, within same gender workgroups, females reported the work-style of their colleagues to be significantly more similar to their own than males ($F(1,29) = 6.073$, $p =.020$). Nevertheless, this difference in perception did not significantly affect measures of performance.

Prediction (3) [EXPERIM]: Cooperation & Performance

With regard to demographically heterogeneous workgroups, members' positive perception of others' cooperation will have a positive effect on workgroup performance and group potential achievement. The measure of cooperation perception [GROUPCOOP] was added as a covariate to Model 1 and Model 2. However, no significant covariance between [GROUPCOOP] and group performance as well as group potential achievement was detected under either the national diversity condition or the gender diversity condition.

Nevertheless, from a group process perspective it might be different. Consistent with the suggestions of the first school of thought, members of same nation workgroups perceived their colleagues as being significantly more cooperative than members of international workgroups ($F(1,63) = 5.420$, $p=.023$). However, no difference in cooperation perception was reported when comparing gender homogeneous workgroups with gender heterogeneous workgroups ($F(1,63) = .571$, $p=.453$).

Prediction (13) [EXPERIM]: IAO & Performance

Positive attitude toward cultural differences will enhance decision-making quality in heterogeneous workgroups. Through randomly assigning subjects to groups, the level of IAO group scores was approximately the same across all experimental groups. This has been confirmed by subsequent Post-Hoc analyses. Thus, a 2 X 2 factorial ANOVA with IAO as first factor and group demographical composition as second factor was conducted on group performance and group potential achievement. IAO was dichotomized into "high IAO" and "low IAO". The 2-way ANOVA indicated no main effect for IAO on performance outcomes in either Model 1 or Model 2. With regard to nationally heterogeneous workgroups, Tukey HSD revealed that groups with "high IAO" did not significantly differ from groups with "low IAO" in either group performance ($p=.45$) or group potential achievement ($p=.59$). Similarly, Tukey HSD showed that gender heterogeneous groups with "high IAO" were not significantly different from gender heterogeneous groups with "low IAO" regarding group performance ($p=.59$) and group potential achievement ($p=.98$).

Although there was a significant difference between groups with "low IAO" ($N=33$, $M=4.18$, $SD=.32$) and groups with "high IAO" ($N=32$, $M=4.90$, $SD=.22$) ($F(1,63) = 109.99$, $p<.001$), participants from both types of groups achieved scores situated at the middle upper level of the IAO scale. None of the groups disclosed to have a negative attitude toward diversity per se. In this regard, IAO scores make a weak predictor of group performance for the given type of population.

Prediction (8) [EXPERIM]: Focus on Human Characteristics & Performance

Workgroups whose members on average focus more on human deep-level characteristics will make better decisions than workgroups whose members focus more on human readily-detectable characteristics. This was verified by entering focus on human characteristics [GROUPFOCUS] in a two-way ANCOVA with condition 1 (nationally homogeneous workgroups vs. nationally heterogeneous workgroups) and condition 2 (gender homogeneous workgroups vs. gender heterogeneous workgroups) as factors and group performance & group potential achievement as dependent variables. Focus on human characteristics was not a significant covariate. It did not account for variance in group decision making nor in group potential achievement.

Subsequently, a 2 X 2 factorial ANOVA with focus on human characteristics as first factor and group demographical composition as second factor was run on group performance and group potential achievement. Concerning the first factor, workgroups whose members on average disclosed viewing others in terms of surface information were set to the first level and workgroups with members focusing on human deep-level characteristics or having no preference to the second level. The focus on human characteristics showed no significant main effect on group outcomes. It also did not interact with either national diversity or gender diversity.

Prediction (12) [EXPERIM]: Spoken Languages & Performance

When averaged at the group level, a higher amount of languages, which members of a group speak, will positively affect group performance. The average amount of spoken languages [GROUPFORLANG] was entered as a covariate into Model 1 and Model 2. However, no significant covariance between [GROUPFORLANG] and the quality of group decisions could be detected, even though members of nationally heterogeneous workgroups knew on average more languages than members of nationally homogeneous workgroups ($F(1,63) = 5.560$, $p=.021$). The short nature of the task might explain why possible effects of language aptitude on performance remained unapparent.

Nevertheless, a 2 X 2 analysis of variance was conducted with group average amount of spoken languages as first factor and group demographical composition as second factor on group performance and group potential achievement. The first level of the first factor comprised workgroups whose members on average spoke one or two languages and the second level comprised workgroups with members speaking three or more languages. The dichotomized factor was labeled [LANGLEVEL]. Results showed no significant main effect for [LANGLEVEL] on group outcomes and no interactions with either national or gender diversity. Each condition revealed no p-value lower than .17.

Research Question (16) [EXPERIM]: IAO & SDO

What type of relationship exists between the Intercultural Attitude Orientation (IAO) and the Social Dominance Orientation (SDO)? Only

participants from the experimental sample were asked to fill out the SDO questionnaire. The relationship between the IAO and SDO scores revealed a negative correlation of a small effect size: r=-.245, p=.00045 (two-tailed). Yet, this weak but significant relationship indicates that participants reporting a better attitude toward diversity tend to support social equality.

Research Question (15) [EXPERIM]: SDO & Performance

Do members' SDO scores relate to decision-making quality? SDO group scores were added as a covariate to Model 1 and Model 2. However, no significant covariance between [SDOGROUP] and either group performance or group potential achievement was detected. The actual similarity in participants' social status (all students) could be the reason SDO had no effect on group outcomes. In each group, members attended the same school, shared the same major, and worked toward the same degree. A more distinguishable status difference among group members might have produced different results. Thus, [SDOGROUP] was dichotomized into "high SDO" and "low SDO". The new variable was named [SDOLEVEL]. Then, a 2 X 2 factorial ANOVA with [SDOLEVEL] as first factor and group demographical composition as second factor was conducted on group performance and group potential achievement. The 2-way ANOVA indicated neither main effect for [SDOLEVEL] on performance outcomes nor interactions with either national or gender diversity. Each condition revealed no p-value lower than .19.

Nevertheless, differences in participants' SDO scores seem to interact with group process. As reported in the satisfaction and demographical composition section, low SDO scores associate with positive workgroup experience. Members of workgroups with lower SDO group scores (the lower the SDO scores, the greater the tendency to support social equality) disclosed being more satisfied working together on the requested task (r=-.344, p =.005, two tailed) than members of workgroups with higher SDO group scores. In the same line, an analysis of variance using [SDOLEVEL] as predictor for workgroup satisfaction [GROUPSATIS] revealed that members of groups averaging low SDO scores reported significantly more satisfaction interacting with one another (F (1,63) = 5.216, p=.025) in comparison to members of groups which averaged high SDO scores. Moreover, participants reporting to focus on readily-detectable human characteristics while choosing colleagues obtained higher SDO scores (N=101, M=2.94, SD=.89), when compared to participants reporting to focus on deep-level characteristics or to have no preferences (N=84, M=2.66, SD=.91). The score difference revealed to be significant (F(1,184) = 4.232, p=.020). This phenomenon should be duly taken into consideration by recruiters. Someone who tends to focus on readily-detectable human characteristics and, at the same time, be socially dominant might impede workgroup process in highly heterogeneous workgroups. Pratto et al. (1994) discovered that individuals with high SDO scores tend to oppose women and gay rights. In addition, in a series of studies conducted with students from Canada and the United States (N=110), Esses, Dovidio, Jackson and Armstrong (2001)

reported a strong negative correlation between SDO and attitude toward immigrants
(r=-.42, p<.001). Miller, Smith, and Mackie (2004) found that individuals with higher SDO scores tend to experience less intergroup contacts and show more prejudice. Thus, such individuals may feel uncomfortable letting some members voice their ideas.

Furthermore, participants speaking three or four languages (M=2.69, SD=.89) achieved significantly lower SDO scores (F(1,184) = 7.382, p=.007) than participants who could speak one or two languages (M=3.07, SD=.89). Consistent with findings from other studies (e.g., Cohrs et al., 2005; Pratto & Hegarty, 2000; Zakrisson, 2008), male participants of the current study scored significantly higher on the SDO scale (M=2.94, SD=.98) than female participants (M=2.70, SD=.84) (F(1,184) = 3.007, p=.043).

Prediction (10) [EXPERIM]: Diversity Exposure & Performance

Workgroups averaging higher levels of diversity exposure will reach better decisions than workgroups averaging lower levels of diversity exposure. The correlations in Table 4.9 show that exposure to diversity [GROUPEXPOSURE] related to group performance (r=-.268, p=.015, one-tailed) and group potential achievement (r=-.274, p=.014, one-tailed) in the predicted direction and therefore warranted further examination.

[GROUPEXPOSURE] was subsequently entered as covariate into Model 1 and Model 2. There was no significant effect of nationality on group performance (F(1,60) = 0.0008, p=.98) and group potential achievement (F(1,60) = 0.3131, p=.58) after controlling for the effect of exposure to diversity. However, the covariate [GROUPEXPOSURE] was significantly related to group performance (F(1,63) = 4.8745, p=.030) and group potential achievement (F(1,63) = 5.0957, p=.027). Results indicated that exposure to diversity was a significant covariate when inserted into Model 1 (national diversity) but not Model 2 (gender diversity). This occurred because nationally heterogeneous workgroups averaged significantly higher levels of diversity exposure than nationally homogeneous workgroups (F(1,63) = 6.587, p=.013). Such difference did not appear between gender homogeneous and gender heterogeneous workgroups.

Furthermore, [GROUPEXPOSURE] was converted into a factor (more exposure vs. less exposure) labeled [GROUPEXPLEVEL] and introduced into a 2 X 2 (diversity exposure X demographical diversity) ANOVA with group performance and group potential achievement as outcome variables. A main effect for diversity exposure on group performance was detected (F(1,61) = 3.0547, p=.042) in Model 1 (see Figure 4.6). The two-way ANOVA provides a better understanding of how exposure to diversity relates to performance. Nationally homogeneous workgroups benefited from members' exposure to diversity slightly more (M=21.83, SD=7.18) than nationally heterogeneous workgroups (M=25.03, SD=13.07). As revealed within the review of literature, higher levels of exposure to diversity affect individuals in different ways. Even when national homogeneity suggests similarity

in members' norms and knowledge, members' exposure to diversity seems to add components such as different perspectives and views to group decision making process.

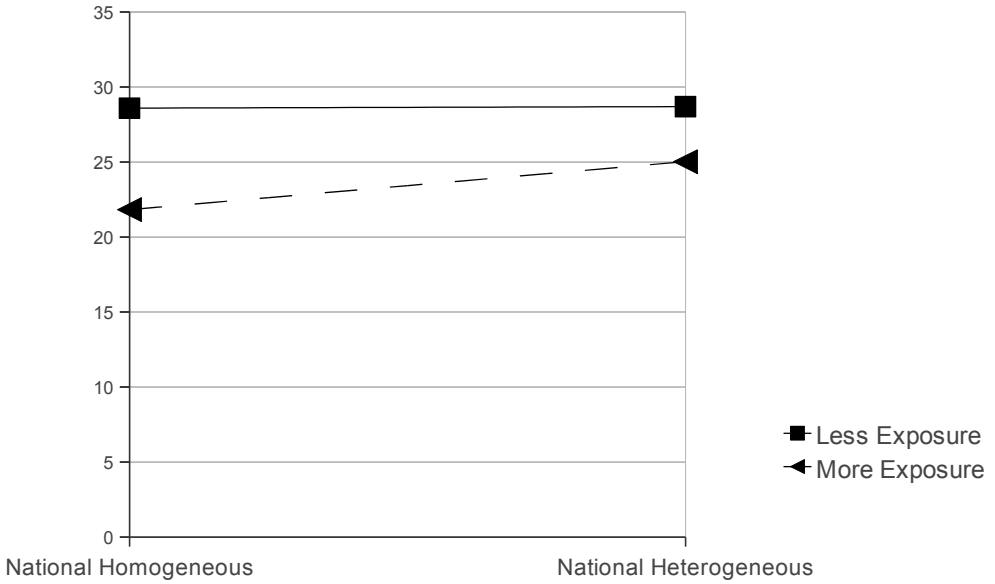

Figure 4.6: National Diversity X Level of Exposure to Diversity on Group Performance (Note. Low means indicate high performance).

4.8 Additional Findings

Although the predictions and the research questions introduced in the theoretical part of the current investigation have been answered, some other findings related to the study variables came across.

For instance, participants who disclosed liking or disliking their colleagues due to socio-emotional factors as response to post-questionnaire item [REASONTOLIKE] perceived others' work-style significantly less different from their own than participants who based their answers upon task-related factors ($F(1,136) = 8.312$, $p=.005$). Moreover, the socio-emotionally oriented participants scored significantly lower on the SDO scale than their counterparts ($F(1,138) = 7.115$, $p=.009$).

Further, workgroups whose members reported to speak three or four languages reached lower SDO scores than workgroups whose members reported to speak one or two languages: $r=-.331$, $p=.007$ (two-tailed). An explanation for this relationship might be found in the main findings presented earlier. Participants speaking three or four languages most often reported having extensive exposure to diversity. In turn, participants with extensive exposure to diversity on average reached lower scores on the SDO scale.

4.9 Discussion

Regarding the effects national diversity might have on performance, the results of the current study did not support either the first school of thought underlying diversity's negative impact on group performance or the second school emphasizing the positive influence of national diversity on group outcomes. In this investigation, nationally homogeneous and nationally heterogeneous workgroups did not differ in their performance. However, gender heterogeneous groups were significantly better at achieving their potential than gender homogeneous groups.

Consistent with the postulation of the first school of thought, members of same nation workgroups found their colleagues more cooperative than members of international workgroups. However, members of gender heterogeneous workgroups did not perceive their colleagues being less cooperative than members of gender homogeneous workgroups. Thus, demographical workgroup composition in form of gender heterogeneity might have reduced process loss, which enabled members to achieve their potential the best.

The first school of thought considers the affective congruence among group members as prerequisite for performance. The results of the current study showed, however, less satisfaction to associate with better performance. The reduction of members' satisfaction might have been caused by a greater variety of alternative viewpoints members brought to the table, which in turn improved the quality of the final group decisions.

Moreover, the findings of the current study revealed that not the differences in norms caused affective non-congruence among group members, but rather members' tendency to disapprove social equality reflected in high SDO scores. Dissatisfaction to work within demographically heterogeneous groups has been merely expressed by participants scoring high on the SDO scale.

Furthermore, diversity exposure revealed to relate to group performance. Nationally homogeneous workgroups showed to benefit from members who experienced higher levels of exposure to diversity the most. Thus, next to the normative non-congruence, extended exposure to diversity appears to associate with non-congruence in knowledge and skills necessary to improve the quality of group decision making.

When compared to nationally homogeneous workgroups, nationally heterogeneous groups could better benefit from the diverse information they were provided with. Similar information packages did not advantage any group. In a group provided with different information packages, a minority member's perspective might have been accepted because he or she was able to support it not only in spoken but also in written form. In a group which received similar information packages, a minority member might have also helped the group make better decisions. However, when factual information is similar among all group members, the voicing of a different perspective may be overheard. The minority member could offer a good perspective but would lack hard facts to support it. Printed facts may strongly enhance the credibility of a minority member trying to share his or her perspective. When someone believes he or she has a good idea and, in addition,

can support it with factual information, group members may be more persuaded to adopt the proposition. It may be anticipated that when the perspective of a minority member is believable (i.e., based on printed facts), trust and cohesion among workgroup members may grow as well, keeping the positive effects of diversity. In short, printed factual information seems to mediate the potential diversity may offer in decision-making.

One of the reasons why the study variables such as IAO, SDO, and focus on human characteristics did not have any effect on group outcomes may lie in the fact that the participants did not significantly differ across the factorial cells with regard to the discussed variables. All participants lived and studied in a multicultural environment. Minority participants were well integrated into the main (German) culture. They all met German university requirements (e.g., language proficiency). Differences in demographics were not very noticeable, with the exception of one female participant who wore a headscarf. Greater demographical salience among participants might have added the attitudinal impact on group outcomes. For instance, the relationship between IAO and SDO ($r=-.245$, $p<.001$) might very well predict sources of frictions in groups with salient demographics. Further, because of the short period of time experimental groups worked together, members' attitudes might not have had an effect on performance. A longer work task might have had different outcomes.

As revealed in the result section, even though the covariates did not directly affect measures of performance, they all interacted with group process and therefore influenced it. Thus, members' perceptions of human differences seem to trigger performance in different ways.

When averaged at group level, the covariate values did not account for significant variance in performance. The measure of the impact a single group member might have had on group potential achievement was beyond the design of the current study. Factors such as exposure to diversity, foreign language aptitude, and attitude toward human differences may have affected group outcomes, when considered at individual rather than group level. In the review of literature, I addressed the topic of how the above human characteristics (study variables) relate to someone's cultural flexibility and perception of differences which together help increase his or her cognitive complexity. In same line, Dobosh (2005) suggests that individuals who acquired higher levels of cognitive complexity possess specific abilities such as listening skills, considering others' perspectives, and identifying others' states. In essence, when groups are self-directed, a member possessing these abilities may naturally emerge as a leader and thus strongly contribute to effective decision-making (Dobosh, 2005). Specifically, when a task must be accomplished in a short period of time, cognitively more complex members tend to be adept at introducing and facilitating group discussions (Burleson & Caplan, 1998).

4.10 Limitations and Future Research

Experiments such as the present one inevitably face certain empirical limitations. One shortcoming was associated with the formation of the experimental groups. The experimental facility did not allow me to make preselection of participants and assign them to groups according to their pre-test scores. The groups had to be randomly formed. Thus, it was possible to manipulate only information diversity, not the demographics. This limited the range of the investigation.

Only participants of the experimental study took the SDO questionnaire. The evaluation of their responses provided important insights into how participants' perception of social status related to other study variables. When compared to the experimental sample consisting exclusively out of students, the explorative sample mirrored a wide range of individuals diverging in occupational status. We could have gained a better understanding of the impact of diversity in occupational backgrounds on social status appraisal, if the participants of the explorative study would have taken the SDO questionnaire as well.

Group process variables have not been directly measured, but subjectively sensed by means of a post-test questionnaire. Analysis of group potential achievement also revealed to be a meaningful method of assessing group efficacy. Workgroups which have best reached their potential must have exchanged information in an effective way. Nevertheless, group potential achievement does not tell us whether members varying in SDO and IAO scores differ in verbal and non-verbal behaviors when engaged in collaborative problem solving. It would be reasonable to conduct a laboratory experiment exploring how attitudes relate to observable behaviors.

Another limitation of the current study stems from the fact that students had to answer questions regarding their perception of human cultural and status differences prior to starting interaction with diverse others, which might have triggered group interaction quality. This means that even though participants significantly differed on their reported attitudes, simply having to report on appraisal of colleagues with different cultural backgrounds may have made them proceed with caution when interacting with group members diverse in gender and nationality. In turn, this created an environment in which diversity was valued and could contribute to group outcomes. In short, reflecting upon such survey questions might have curbed some of the negative effects demographical heterogeneity may cause, thus increasing communication and cohesion among group members. And as a matter of fact, without effective information exchange, demographically heterogeneous workgroups would have not been able to perform the best.

5 Conclusion

In the current investigation, it was demonstrated that the ability to work on complex tasks within complex environments is associated with specific competencies. Knowing the competencies needed for an individual to fit into diverse environments will help educational institutions to set up curriculum priorities. Most often, the priorities lie in teaching the pupils, and later students strong knowledge in math, chemistry, physics, biology, history, etc. This type of knowledge is with no doubt crucial. As literature on small group research suggests, acting within workgroups is bounded with countless group process related issues. Thus, educational institutions should teach students how to act effectively in small groups at a very young age. Because when group process fails, members' knowledge does not help. Therefore, acquisition of new languages, gain of experience with diverse people, and appreciation of deep human dimensions would effectively equip individuals with cognitive complexity needed to adapt to an unpredictable and fast changing workforce. The above competencies may ease the perception of differences regarding colleagues' diverse socialization and norms.

The results of the current investigation revealed that when a task requires intense information exchange demographically heterogeneous workgroups performed the best as far as gender diversity was present. Gender diversity did not only contribute to group outcomes, but also helped the groups to better reach their potential. Female participants scored the highest on all dimensions facilitating group cooperation and communication. Members who feel less bothered by differences seem to be quicker at getting into work.

Further research on how information distribution affects group performance should be carried out with a sample varying in demographics to a greater degree than the student sample of the current investigation. Nevertheless, the study results revealed that the tested student population is well able to act within diverse environments. A potential explanation for the statement above may be derived from participants' IAO scores (M=4.53, SD=.83). When averaged, the self-reported appraisal of human differences mirrors the fourth stage in Bennett's Model of Intercultural Sensitivity. During this stage called acceptance of difference, individuals come to recognize and value cultural differences as an alternative way to their own believes. The achievement of the "acceptance" level qualifies the university students as individuals being "equipped enough" to face challenges of complex environments.

The need for groups to work on short-term tasks is not going to decrease because industrial changes happen fast and unexpectedly. New things are developed at rocket speed. Teams who worked together for years may not be able to continuously offer fresh ideas and savoir-faire. Staffing workgroups with individuals who are well-equipped to encounter market turmoil is a prerequisite for an orga-

nization's success.

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Appendix - A

A1: Performance Measures (Formulas)

1. Correct Distance: CD

2. Individual Answer Prior Group Discussion: IA

3. Group Answer: GA

4. Group Performance: GP

$$GP = \frac{\sum_{i=1}^{14} y_i}{14},\ i - number\ of\ questions\ (i \in [1, ..., 14]),\ y_i = \frac{(|GA - CD| \cdot 100\%)}{CD},$$

$$GA - Group\ Answer,\ CD - Correct\ Distance$$

5. Best Individual Answer: BIA (recorded manually)

6. Group Potential: GP

$$GP = \frac{\sum_{i=1}^{14} y_i}{14},\ i - number\ of\ questions\ (i \in [1, ..., 14]),\ y_i = \frac{(|BIA - CD| \cdot 100\%)}{CD},$$

$$BIA - Best\ Individual\ Answer,\ CD - Correct\ Distance$$

7. Group Potential Achievement: GPA

$$GPA = \frac{\sum_{i=1}^{14} y_i}{14},\ i - number\ of\ questions\ (i \in [1, ..., 14]),\ y_i = \frac{(|GA - BIA| \cdot 100\%)}{BIA},$$

$$GA - Group\ Answer,\ BIA - Best\ Individual\ Answer$$

Appendix - B

B1: Cover Letter for Online IAO Questionnaire

SUBJECT: Student Research Project (23 questions available in 4 different languages) (Humboldt University Berlin)

Hello!

My name is Daniel Sciboz; I am a doctoral student in the Department of Organizational and Social Psychology at Humboldt University in Berlin. The purpose of my research is to learn more about cultural diversity in today's organizations and society. I used the search engine Google.com as a tool to collect any and only email addresses; that is how I have been able to reach you. I would appreciate it very much, if you took three or four minutes to answer the questions (23) included in the following questionnaire.

The questionnaire is offered in four different languages; please choose below:

English / French / German / Russian

Your answers will remain anonymous and in no case be identifiable with any personal names. Would you be interested to see more information about this study?

Website: http://jugendserver.spinnenwerk.de/daniel.sciboz/

Would you like to be informed about the results?

E-mail: daniel.sciboz@psychologie.hu-berlin.de

Your help is very valuable to me.

Kind regards,

Daniel Sciboz

IMPORTANT NOTICE: If you choose to complete this questionnaire, please proceed first as you would REPLY to this message and write your answers below each question.

B2: IAO Questionnaire - Explorative Study (in English)

1. Cultural background (country of origin/ nationality/ ethnicity):
2. Native language(s): **3.** Age: **4.** Gender:
5. Education (field or type of study / apprenticeship):
6. Profession/ occupation:
7. Do you already have an experience interacting/working with people with a different cultural/ethnic background from yours? If yes, what kind?
8. Do you speak any foreign language(s)?
If yes, which one(s)?
9. Establishing an interpersonal relationship with individuals having a different cultural background is easy.
10. Dealing with cultural uncertainties is troublesome.
11. I (would) feel stressed working with people having a different cultural background.
12. In a workgroup, a greater amount of new ideas can be generated, if individuals with different cultural backgrounds are present.
13. In a workgroup with colleagues having different cultural backgrounds, there are greater chances for an incurable conflict, than in a homogeneous group.
14. Hearing an individual speaking my native language incorrectly confuses me.
15. When in a different country from my own, I (would) look forward to meeting my fellow citizens.
16. I tend to develop closer relationships with people having a similar cultural background than with people having different cultural backgrounds.
17. Due to cultural similarities, my fellow citizens are more likely to understand me.
18. I can deal with whatever difficult feelings or frustrations I might experience in a new culture.
19. Information sharing in a team decreases, if individuals with different cultural backgrounds are present.
20. I do not feel I am a member of any particular culture; I feel I am something else.
21. In which environment (would) do you prefer to work?
- **(a)** with people having a similar cultural background
- **(b)** with people having a different cultural background
- **(c)** it does not matter whom I work with

22. If you had the choice, from which country/region or countries/regions would you choose colleagues?
23. If you had the choice, from which country/region or countries/regions would you avoid choosing colleagues?

B3: IAO Questionnaire - Explorative Study (in French)

1. Origine culturelle (pays d'origine, nationalité, appartenance ethnique):
2. Langue maternelle: **3.** Age: **4.** Sexe:
5. Formation (type/branche d'étude ou apprentissage):
6. Profession/occupation:
7. Avez-vous déjà eu l'occasion de parler ou de travailler avec des personnes ayant une origine culturelle/ethnicité différente de la vôtre? Si oui, quel genre d'expérience?
8. Parlez-vous une ou plusieurs langue (s) étrangère (s) ? Si oui, laquelle, lesquelles?
9. L'établissement d'une relation interpersonnelle avec des individus ayant une origine culturelle différente est facile.
10. Traiter des incertitudes culturelles sont ennuyeuses.
11. Je me sens (sentirais) stressé si je devais travailler avec des personnes ayant une origine culturelle différente.
12. Dans une équipe de travail, un plus grand nombre de nouvelles idées peuvent être produites, si des membres avec des origines culturelles différentes sont présents.
13. Dans une équipe de travail avec des membres ayant des origines culturelles différentes, il y a de plus grandes chances d'avoir un conflit incurable, en rapport avec un groupe homogène.
14. Entendre un individu parler ma langue maternelle de manière incorrecte m'induit en erreur.
15. Si je suis (étais) dans un pays étranger, je me réjouis (réjouirais) de rencontrer mes concitoyens.
16. J'ai tendance à développer des rapports plus étroits avec des gens ayant une origine culturelle semblable, qu'avec des gens ayant une origine culturelle différente.
17. En raison de nos similarités culturelles, mes collègues citoyens me comprennent le mieux.
18. Je suis capable de traiter les sentiments difficiles ou frustrations que je pourrais éprouver dans une nouvelle culture ou environnement.
19. Le nombre des échanges d'informations dans une équipe de travail diminue, si des membres avec une origine culturelle différente sont présents.
20. Je ne me sens pas être un membre d'une culture particulière; je me sens être quelqu' un d'ailleurs.
21. Dans quel environnement préférez (préféreriez)-vous travailler?
- **(a)** avec des personnes ayant une origine culturelle semblable
- **(b)** avec des personnes ayant une origine culturelle différente
- **(c)** ça ne fait rien avec qui je travaille

22. Si vous aviez le choix, les gens de quel pays ou région choisiriez vous comme collègues?
23. Si vous aviez le choix, les gens de de quel pays ou région éviteriez vous de choisir comme collègues?

B4: IAO Questionnaire - Explorative Study (in German)

1. Kulturelle Hintergründe (Herkunftsland, Nationalität, Ethnizität / Volkszugehörigkeit)
2. Muttersprache(n): **3.** Alter: **4.** Geschlecht: **5.** Ausbildung:
6. Beruf/ Beschäftigung:
7. Haben Sie bereits Erfahrung im Umgang mit Menschen, die andere kulturelle Hintergründe haben? Wenn ja, welche Art von Erfahrung?
8. Sprechen Sie eine/mehrere Fremdsprache(n)? Wenn ja, welche Fremdsprache(n)?
9. Der Aufbau/die Gestaltung von zwischenmenschlichen Beziehungen mit Menschen, die andere kulturelle Hintergründe haben, ist einfach.
10. Das Umgehen mit kulturellen Unklarheiten ist problematisch.
11. Ich fühle mich gestresst (ich würde mich gestresst fühlen), mit Menschen zu arbeiten, die andere kulturelle Hintergründe haben.
12. In einer Arbeitsgruppe kann eine größere Menge neuer Ideen gewonnen werden, wenn Personen mit anderen kulturellen Hintergründen als Gruppenmitglieder dabei sind.
13. Im Vergleich zu einer kulturell homogenen/gleichartigen Arbeitsgruppe bestehen in einer kulturell diversen/vielfältigen Gruppe größere Chancen, einen unheilbaren Konflikt auszulösen.
14. Es verwirrt mich, wenn ich Menschen meine Muttersprache grammatikalisch unkorrekt sprechen höre.
15. Wenn ich mich in einem fremden Land befinde, freue ich mich immer, meine Landesleute zu treffen.
16. Ich neige mehr dazu, engere Beziehungen zu Kollegen/Kolleginnen mit ähnlichen kulturellen Hintergründen zu entwickeln, als zu Kollegen/Kolleginnen mit anderen kulturellen Hintergründen.
17. Wegen ähnlicher Mentalität sind meine Landesleute eher imstande, mich zu verstehen.
18. Ich komme mit allen Emotionen bzw. Frustrationen klar, die ich in einer neuen Kultur erlebe.
19. Der Informationsaustausch in einer Arbeitsgruppe nimmt ab, wenn Personen mit anderen kulturellen Hintergründen als Mitglieder dabei sind.
20. Ich empfinde mich nicht als Vertreter einer bestimmten Kultur; ich empfinde, ich bin etwas anderes.
21. Welche Arbeitsumgebung bevorzugen Sie?
- **(a)** mit Menschen, die ähnliche kulturelle Hintergründe haben
- **(b)** mit Menschen, die andere kulturelle Hintergründe haben
- **(c)** es spielt für mich keine Rolle, mit wem ich zu arbeiten habe

22. Hätten Sie die Wahl, aus welchen Ländern/Regionen würden Sie Ihre Arbeitskollegen/ Arbeitskolleginnen wählen?
23. Hätten Sie die Wahl, Arbeitskollegen/Arbeitskolleginnen aus welchen Ländern/Regionen würden Sie vermeiden?

B5: IAO Questionnaire - Explorative Study (in Russian)

1. Страна рождения/национальность/этническая принадлежность:
2. Родной язык (родные языки):
3. Возраст:
4. Пол:
5. Образование:
6. Профессия/должностное положение:
7. Имеете ли Вы опыт общения с людьми других национальностей/этнических принадлежностей/гражданами иностранных государств? Если да, то опыт какого вида?
8. Владеете ли Вы каким-либо иностранным языком (иностранными
яыками)? Если да, то каким (какими)?
9. Построение отношений с людьми других национальностей/этнических принадлежностей/гражданами иностранных государств - просто.
10. Иметь дело с неопределенностью и двусмысленностью определений/значений, иногда возникающих при соприкосновении с другими культурами - проблематично.
11. Работа с людьми других национальностей/этнических принадлежностей означает для меня стресс и неудобство.
12. В отношении работы в команде: присутствие представителей других национальностей/этнических принадлежностей в качестве членов команды позволяет существенно увеличить количество новых идей.
13. По сравнению с командой, состоящей из представителей одной национальности, в команде, члены которой являются выходцами из разных культур, существуют более высокие шансы неразрешимого конфликта.
14. Я чувствую замешательство/дискомфорт, если слышу, что на моем родном языке разговаривают с ошибками.
15. Если я нахожусь в другой стране, я всегда радуюсь встрече с моими земляками.
16. Я склонен/склонна строить более близкие отношения с коллегами-земляками чем с коллегами-выходцами из других культур.
17. В силу одинаковой ментальности мои земляки скорее в состоянии понять меня.
18. Я с легкостью могу справиться с любыми негативными эмоциями/расстройствами, переживаемыми мною в новой для меня стране/культуре.
19. Обмен информации в команде уменьшается, если представители других национальностей/этнических принадлежностей присутствуют в качестве членов команды.
20. Я не считаю/не ощущаю себя представителем определенной культуры; я думаю, что я что-то другое.
21. Какое окружение Вы предпочитаете на рабочем месте?
(А) окружение, состоящее из коллег-земляков
(Б) окружение, состоящее из коллег-выходцев из других культур
(В) для меня не имеет значения, с кем мне работать
22. Если бы у Вас был выбор, людей из каких стран Вы выбрали бы себе в коллеги?
23. Людей из каких стран Вы бы не хотели видеть в качестве своих коллег?

B6: IAO Questionnaire - Explorative Study (in Spanish)

1. Orígen cultural (país de origen, nacionalidad, etnia):
2. Lengua(s) nativa(s): **3.** Edad: **4.** Sexo:
5. Nivel de estudios (campo de estudios/graduado escolar o universitario):
6. Profesión/ ocupación:
7. ¿Posee experiencia trabajando/interactuando con personas de orígen cultural / étnico distinto al suyo? En caso afirmativo, ¿Qué tipo de experiencia?
8. Habla algún idioma extranjero? En caso afirmativo, ¿cuáles?
9. Resulta fácil establecer una relación interpersonal entre individuos con orígen cultural diferente.
10. Trabajar con incertidumbres de tipo cultural puede crear problemas.
11. Me sentiría estresado si trabajase con personas de diferente orígen cultural.
12. En un grupo de trabajo, aparecen una mayor cantidad de nuevas ideas si se trata de un grupo formado por individuos de distinto orígen cultural.
13. En un grupo de trabajo del que formen parte miembros con orígenes culturales distintos, existen más posibilidades de conflictos irremediables que en un grupo homogéneo.
14. Me siento confuso al escuchar a un individuo hablar de forma incorrecta mi lengua materna.
15. Estando en un país extranjero, me gustaría encontrarme con mis compatriotas.
16. Tiendo a desarrollar relaciones más intimas con gente de orígen cultural similar al mío, que con gente de orígen cultural distinto.
17. Gracias a similitudes culturales, mis compatriotas tienden a entenderme mejor que personas de otras nacionalidades.
18. Soy capaz de sobrellevar cualquier sentimiento incómodo o frustración que pueda sentir ante una nueva cultura.
19. En un grupo formado por individuos de distinto orígen cultural el nivel de intercambio de información disminuye.
20. No me siento miembro de una cultura en particular, sino más bien siento que soy otra cosa.
21. ¿En qué contexto preferiría trabajar?
- **(a)** con gente de orígen cultural similar.
- **(b)** con gente de orígen cultural distinto.
- **(c)** no me importa con quien trabaje.

22. Si pudiera escoger a sus colegas, ¿de qué región/regiones o país/países los escogería?
23. Si pudiera escoger a sus colegas, ¿de qué región/regiones o país/países trataría de evitar?

Appendix - C

C1: Experimental Package (in English)

WELCOME: The following statements clarify the objectives of the experiment to the participants

I would like to thank each of you for participating in this study. I welcome you in this room and want first to introduce myself before to expose you to the procedures.

My name is Daniel Sciboz. I am a doctoral Student at the Humboldt University, Department for Social and Organizational Psychology. This study will help not only me with my dissertation, but also other scholars, organizations as well as anyone who is interested in workgroup dynamics.

Your participation is highly valuable to me. Though, I hope that you will enjoy the activity. I wanted to mention that the results of this study will be available to you. You may request any information at dsciboz@arcor.de.

First, I would like you to complete two short questionnaires prior to starting the group activity. You will see, the first questionnaire has 23 questions. The second one counts 16 questions. It should take you about 15 minutes to fill out both questionnaires.

In the second part of the experiment, you are invited to work on a short project, which main goal is to approximately guess the distances between different cities. For each question, provide first an answer based on your individual knowledge and then the answer of the group.

A final note on the anonymity of the project: no name will be published in any form.

Thanks again and good luck.

Daniel Sciboz

****

I am member (A) of Group (1)

Questionnaire I Member ( ) Group ( )

-Please write your answers

1. Cultural background (country of origin/ nationality/ ethnicity): .....
.....
2. Native language(s): ..... **3.** Age: ..... **4.** Gender: ..... **5.** Education:
.....
6. Profession/ occupation: .....
7. Do you already have an experience interacting/working with people with a different cultural / ethnic background from yours? If yes, what kind? .....
.....
8. Do you speak any foreign language(s)? .....If yes, which one(s)?
.....

-Please take a few moments to read the following statements. You may circle the number corresponding to the degree of agreement or disagreement using the scale below each statement.

9. Establishing an interpersonal relationship with individuals having a different cultural background is easy.

strongly disagree	moderately disagree	slightly disagree	partially agree and partially disagree	slightly agree	moderately agree	strongly agree
-3	-2	-1	0	1	2	3

10. Dealing with cultural uncertainties is troublesome.

strongly disagree	moderately disagree	slightly disagree	partially agree and partially disagree	slightly agree	moderately agree	strongly agree
-3	-2	-1	0	1	2	3

11. I (would) feel stressed working with people having a different cultural background.

strongly disagree	moderately disagree	slightly disagree	partially agree and partially disagree	slightly agree	moderately agree	strongly agree
-3	-2	-1	0	1	2	3

12. In a workgroup, a greater amount of new ideas can be generated, if individuals with different cultural backgrounds are present.

strongly disagree	moderately disagree	slightly disagree	partially agree and partially disagree	slightly agree	moderately agree	strongly agree
-3	-2	-1	0	1	2	3

13. In a workgroup with colleagues having different cultural backgrounds, there are greater chances for an incurable conflict, than in a homogeneous group.

strongly disagree	moderately disagree	slightly disagree	partially agree and partially disagree	slightly agree	moderately agree	strongly agree
-3	-2	-1	0	1	2	3

14. Hearing an individual speaking my native language incorrectly confuses me.

strongly disagree	moderately disagree	slightly disagree	partially agree and partially disagree	slightly agree	moderately agree	strongly agree
-3	-2	-1	0	1	2	3

15. When in a different country from my own, I (would) look forward to meeting my fellow citizens.

strongly disagree	moderately disagree	slightly disagree	partially agree and partially disagree	slightly agree	moderately agree	strongly agree
-3	-2	-1	0	1	2	3

16. I tend to develop closer relationships with people having a similar cultural background than with people having different cultural backgrounds.

strongly disagree	moderately disagree	slightly disagree	partially agree and partially disagree	slightly agree	moderately agree	strongly agree
-3	-2	-1	0	1	2	3

17. Due to cultural similarities, my fellow citizens are more likely to understand me.

strongly disagree	moderately disagree	slightly disagree	partially agree and partially disagree	slightly agree	moderately agree	strongly agree
-3	-2	-1	0	1	2	3

18. I can deal with whatever difficult feelings or frustrations I might experience in a new culture.

strongly disagree	moderately disagree	slightly disagree	partially agree and partially disagree	slightly agree	moderately agree	strongly agree
-3	-2	-1	0	1	2	3

19. Information sharing in a team decreases, if individuals with different cultural backgrounds are present.

strongly disagree	moderately disagree	slightly disagree	partially agree and partially disagree	slightly agree	moderately agree	strongly agree
-3	-2	-1	0	1	2	3

20. I do not feel I am a member of any particular culture; I feel I am something else.

strongly disagree	moderately disagree	slightly disagree	partially agree and partially disagree	slightly agree	moderately agree	strongly agree
-3	-2	-1	0	1	2	3

21. In which environment (would) do you prefer to work?
(a) with people having a similar cultural background
(b) with people having a different cultural background
(c) it does not matter whom I work with

22. If you had the choice, from which country/region or countries/regions would you choose colleagues? . . . . . .
. . . . . .

23. If you had the choice, from which country/region or countries/regions would you avoid choosing colleagues? . . . . . .
. . . . . .

Questionnaire II Member ( ) Group ( )

Instructions: Below are a series of statements with which you may either agree or disagree. For each statement, please indicate the degree of your agreement/disagreement by circling the appropriate number from 1 to 7.

	Strongly Disagree/ Disapprove						Strongly Agree/ Favor
1. Some groups of people are just more worthy than others.	1	2	3	4	5	6	7
2. In getting what your group wants, it is sometimes necessary to use force against other groups.	1	2	3	4	5	6	7
3. Superior groups should dominate inferior groups.	1	2	3	4	5	6	7
4. To get ahead in life, it is sometimes necessary to step on other groups.	1	2	3	4	5	6	7
5. If certain groups of people stayed in their place, we would have fewer problems.	1	2	3	4	5	6	7
6. It's probably a good thing that certain groups are at the top and other groups are at the bottom.	1	2	3	4	5	6	7
7. Inferior groups should stay in their place.	1	2	3	4	5	6	7
8. Sometimes other groups must be kept in their place.	1	2	3	4	5	6	7
9. It would be good if all groups could be equal.	1	2	3	4	5	6	7
10. Group equality should be our ideal.	1	2	3	4	5	6	7
11. All groups should be given an equal chance in life.	1	2	3	4	5	6	7
12. We should do what we can to equalize conditions for different groups.	1	2	3	4	5	6	7
13. Increased social equality.	1	2	3	4	5	6	7
14. We would have fewer problems if we treated different groups more equally.	1	2	3	4	5	6	7
15. We should strive to make incomes more equal.	1	2	3	4	5	6	7
16. No one group should dominate in society.	1	2	3	4	5	6	7

Group Answer Sheet Member ( ) Group ( )

Questions	My personal answer prior to group discussion	Group answer
1. What is the distance between Havana and Moscow? (9593 km)	km	km
2. What is the distance between Quebec and Rio de Janeiro? (8253 km)	km	km
3. What is the distance between Kiev and Hong Kong? (7684 km)	km	km
4. What is the distance between Madrid and New York? (5772 km)	km	km
5. What is the distance between Peking and Jakarta? (5265 km)	km	km
6. What is the distance between Shanghai and New Delhi? (4244 km)	km	km
7. What is the distance between Lima and Santiago? (2468 km)	km	km
8. What is the distance between Washington DC and Vancouver? (3795 km)	km	km
9. What is the distance between Manila and Seoul? (2625 km)	km	km
10. What is the distance between Sofia and Riga? (1588 km)	km	km
11. What is the distance between London and Bordeaux? (744 km)	km	km
12. What is the distance between Helsinki and Minsk? (716 km)	km	km
13. What is the distance between Bremen and Munich? (583 km)	km	km
14. What is the distance between Berlin and Hamburg? (254 km)	km	km

Note. Correct distances based upon "CITY DISTANCE TOOL" at http://www.geobytes.com/CityDistanceTool.htm

Post Questionnaire

Question 15: Did you enjoy to work with your group?

not at all	a little bit	somewhat	very much	extremely
1	2	3	4	5

Question 16: Were all members willing to share their knowledge with the group?

not at all	a little bit	somewhat	very much	extremely
1	2	3	4	5

Question 17: How cooperative did you find person A, B, and C?
MEMBER A

not at all	a little bit	somewhat	very much	extremely
1	2	3	4	5

MEMBER B

not at all	a little bit	somewhat	very much	extremely
1	2	3	4	5

MEMBER C

not at all	a little bit	somewhat	very much	extremely
1	2	3	4	5

Question 18: How much did you like to work with person A, B, and C ?
MEMBER A

not at all	a little bit	somewhat	very much	extremely
1	2	3	4	5

MEMBER B

not at all	a little bit	somewhat	very much	extremely
1	2	3	4	5

MEMBER C

not at all	a little bit	somewhat	very much	extremely
1	2	3	4	5

Question 19: How different did you find the working style of person A, B, and C
MEMBER A

not at all	a little bit	somewhat	very much	extremely
1	2	3	4	5

MEMBER B

not at all	a little bit	somewhat	very much	extremely
1	2	3	4	5

MEMBER C

not at all	a little bit	somewhat	very much	extremely
1	2	3	4	5

Question 20: Explain in short why you did like or did not like other members .....
. . . . . .
. . . . . .

C2: Experimental Package (in German)

Zielsetzung des Experiments

Hallo,

ich begrüße Sie in diesem Raum und möchte mich bei jedem von Ihnen für das Teilnehmen an dieser Studie bedanken. Mein Name ist Daniel Sciboz. Ich bin Doktorand an der Fakultät für Psychologie der Humboldt-Universität zu Berlin. Diese Studie hilft nicht nur mir mit meiner Dissertation, sondern auch anderen Fachleuten, Organisationen sowie jedem, der an Gruppendynamik interessiert ist. Ihre Teilnahme ist sehr wertvoll für mich.

Ich hoffe, Sie werden eine gute Zeit während des Experiments haben. Ich wollte erwähnen, dass die Ergebnisse dieser Studie für Sie zur Verfügung gestellt werden. Weitere Informationen zu der Studie können Sie unter dsciboz@arcor.de erfragen.

Bevor Sie mit der geplanten Gruppenaktivität anfangen, möchte ich Sie bitten, zwei kurze Fragebögen auszufüllen. Sie sehen, der erste Fragebogen besteht aus 23 Fragen. Sie können wählen, ob Sie ihn in deutscher oder in englischer Sprache machen. Der zweite Fragebogen hat nur 16 Fragen, die ebenfalls auf Deutsch und auf Englisch formuliert wurden. Das Ausfüllen beider Fragebögen nimmt circa 10 Minuten in Anspruch.

Im zweiten Teil des Experiments werden Sie eingeladen, an einem kurzen Projekt zu arbeiten. Dessen Grundidee ist, Distanz zwischen verschiedenen Städten der Welt zu schätzen. Sie werden gebeten, jede Frage erst individuell - basierend auf Ihrem Wissen - zu beantworten und anschließend eine Gruppenantwort zu erarbeiten und zu ermitteln (Sehen Sie bitte Ihren Antwortbogen).

Eine Schlussbemerkung bezogen auf die Anonymität des Projektes: kein Name wird je in einer Form veröffentlicht.

Danke noch einmal und viel Spaß beim Arbeiten.

Daniel Sciboz

****

Ich bin Mitglied (A) in Gruppe (1)

Fragebogen I Mitglied ( ) Grouppe ( )

-Bitte schreiben Sie Ihre Antworten

1. Kulturelle Hintergründe (Herkunftsland, Nationalität, Ethnizität / Volkszugehörigkeit) ...
2. Muttersprache(n): .....**3.** Alter: .....**4.** Geschlecht: .....**5.** Ausbildung: .....
6. Beruf/ Beschäftigung: .....
7. Haben Sie bereits Erfahrung im Umgang mit Menschen, die andere kulturelle Hintergründe haben? Wenn ja, welche Art von Erfahrung? .....
.....
8. Sprechen Sie eine/mehrere Fremdsprache(n)? Wenn ja, welche Fremdsprache(n)? .....

-Bitte lesen Sie die folgenden Aussagen. Kreisen Sie bitte am Ende jeder Aussage die Zahl, die dem Grad Ihrer Zustimmung zu der Aussage am ehesten entspricht, wie es in der Skala vorgeschlagen ist.

9. Der Aufbau/die Gestaltung von zwischenmenschlichen Beziehungen mit Menschen, die andere kulturelle Hintergründe haben, ist einfach.

lehne stark ab	lehne im Allgemeinen ab	lehne eher ab	teils teils	stimme eher zu	stimme im Allgemeinen zu	stimme stark zu
-3	-2	-1	0	1	2	3

10. Das Umgehen mit kulturellen Unklarheiten ist problematisch.

lehne stark ab	lehne im Allgemeinen ab	lehne eher ab	teils teils	stimme eher zu	stimme im Allgemeinen zu	stimme stark zu
-3	-2	-1	0	1	2	3

11. Ich fühle mich gestresst (ich würde mich gestresst fühlen), mit Menschen zu arbeiten, die andere kulturelle Hintergründe haben.

lehne stark ab	lehne im Allgemeinen ab	lehne eher ab	teils teils	stimme eher zu	stimme im Allgemeinen zu	stimme stark zu
-3	-2	-1	0	1	2	3

12. In einer Arbeitsgruppe kann eine größere Menge neuer Ideen gewonnen werden, wenn Personen mit anderen kulturellen Hintergründen als Gruppenmitglieder dabei sind.

lehne stark ab	lehne im Allgemeinen ab	lehne eher ab	teils teils	stimme eher zu	stimme im Allgemeinen zu	stimme stark zu
-3	-2	-1	0	1	2	3

13. Im Vergleich zu einer kulturell homogenen/gleichartigen Arbeitsgruppe bestehen in einer kulturell diversen/vielfältigen Gruppe größere Chancen, einen unheilbaren Konflikt auszulösen.

lehne stark ab	lehne im Allgemeinen ab	lehne eher ab	teils teils	stimme eher zu	stimme im Allgemeinen zu	stimme stark zu
-3	-2	-1	0	1	2	3

14. Es verwirrt mich, wenn ich Menschen meine Muttersprache grammatikalisch unkorrekt sprechen höre.

lehne stark ab	lehne im Allgemeinen ab	lehne eher ab	teils teils	stimme eher zu	stimme im Allgemeinen zu	stimme stark zu
-3	-2	-1	0	1	2	3

15. Wenn ich mich in einem fremden Land befinde, freue ich mich immer, meine Landesleute zu treffen.

lehne stark ab	lehne im Allgemeinen ab	lehne eher ab	teils teils	stimme eher zu	stimme im Allgemeinen zu	stimme stark zu
-3	-2	-1	0	1	2	3

16. Ich neige mehr dazu, engere Beziehungen zu Kollegen / Kolleginnen mit ähnlichen kulturellen Hintergründen zu entwickeln, als zu Kollegen / Kolleginnen mit anderen kulturellen Hinter-gründen.

lehne stark ab	lehne im Allgemeinen ab	lehne eher ab	teils teils	stimme eher zu	stimme im Allgemeinen zu	stimme stark zu
-3	-2	-1	0	1	2	3

17. Wegen ähnlicher Mentalität sind meine Landesleute eher imstande, mich zu verstehen.

lehne stark ab	lehne im Allgemeinen ab	lehne eher ab	teils teils	stimme eher zu	stimme im Allgemeinen zu	stimme stark zu
-3	-2	-1	0	1	2	3

18. Ich komme mit allen Emotionen bzw. Frustrationen klar, die ich in einer neuen Kultur erlebe.

lehne stark ab	lehne im Allgemeinen ab	lehne eher ab	teils teils	stimme eher zu	stimme im Allgemeinen zu	stimme stark zu
-3	-2	-1	0	1	2	3

19. Der Informationsaustausch in einer Arbeitsgruppe nimmt ab, wenn Personen mit anderen kulturellen Hintergründen als Mitglieder dabei sind.

lehne stark ab	lehne im Allgemeinen ab	lehne eher ab	teils teils	stimme eher zu	stimme im Allgemeinen zu	stimme stark zu
-3	-2	-1	0	1	2	3

20. Ich empfinde mich nicht als Vertreter einer bestimmten Kultur; ich empfinde, ich bin etwas anderes.

lehne stark ab	lehne im Allgemeinen ab	lehne eher ab	teils teils	stimme eher zu	stimme im Allgemeinen zu	stimme stark zu
-3	-2	-1	0	1	2	3

21. Welche Arbeitsumgebung bevorzugen Sie?
(a) mit Menschen, die ähnliche kulturelle Hintergründe haben
(b) mit Menschen, die andere kulturelle Hintergründe haben
(c) es spielt für mich keine Rolle, mit wem ich zu arbeiten habe

22. Hätten Sie die Wahl, aus welchen Ländern / Regionen würden Sie Ihre Arbeitskollegen / Arbeitskolleginnen wählen? .....
.....

23. Hätten Sie die Wahl, Arbeitskollegen / Arbeitskolleginnen aus welchen Ländern/Regionen würden Sie vermeiden? .....
.....

Fragebogen II Mitglied ( ) Gruppe ( )

Sie werden im Folgenden eine Reihe von Aussagen vorfinden und haben jeweils anzugeben, wie stark Sie persönlich jeder Aussage zustimmen oder nicht. Bitte kreisen Sie die Nummer von 1 bis 7 um, inwieweit Sie der jeweiligen Aussagen zustimmen oder sie ablehnen.
(*)Mit Gruppen können dabei beispielsweise religiöse Gruppen, ethnische Gruppen, die beiden Geschlechter oder auch Statusgruppen gemeint werden.

	Völlige Ablehnung						Völlige Zustimmung
1. Einige Gruppen(*) sind anderen gegenüber einfach überlegen, das lässt sich beim besten Willen nicht leugnen.	1	2	3	4	5	6	7
2. Um das zu bekommen, was man möchte, ist es manchmal notwendig, die nötige Härte gegenüber anderen Gruppen zu zeigen.	1	2	3	4	5	6	7
3. Manche Gruppen haben mehr Chancen im Leben als andere, das ist völlig in Ordnung.	1	2	3	4	5	6	7
4. Um im Leben voranzukommen, ist es manchmal nötig, keine Rücksicht auf andere Gruppen zu nehmen.	1	2	3	4	5	6	7
5. Wenn bestimmte Gruppen unter sich bleiben würden, hätten wir weniger Probleme.	1	2	3	4	5	6	7
6. Es ist wahrscheinlich richtig, dass bestimmte Gruppen in der Gesellschaft oben stehen und andere unten.	1	2	3	4	5	6	7
7. Unterlegene Gruppen sollten unter sich bleiben.	1	2	3	4	5	6	7
8. Manchmal müssen andere Gruppen in ihre Schranken verwiesen werden.	1	2	3	4	5	6	7
9. Es wäre gut, wenn alle Gruppen gleichgestellt wären.	1	2	3	4	5	6	7
10. Gruppengleichheit sollte unser Ideal sein.	1	2	3	4	5	6	7
11. Alle Gruppen sollten die gleichen Chancen im Leben haben.	1	2	3	4	5	6	7
12. Wir sollten unser Möglichstes tun, um die Bedingungen für die unterschiedlichen Gruppen anzugleichen.	1	2	3	4	5	6	7
13. Soziale Gleichheit sollte zunehmen.	1	2	3	4	5	6	7
14. Wir hätten weniger Probleme, wenn wir alle Gruppen gleich behandeln würden.	1	2	3	4	5	6	7
15. Wir sollten uns bemühen, die Einkommen für alle so gleich wie möglich zu gestalten.	1	2	3	4	5	6	7
16. In der Gesellschaft sollte keine einzelne Gruppe dominieren.	1	2	3	4	5	6	7

Gruppen und Individuelle Antwortbogen Mitglied ( ) Gruppe ( )

Frage	Meine individuelle Antwort VOR der Gruppendiskussion	Gruppenantwort
1. Was ist die Distanz zwischen Havana und Moskau?	km	km
2. Was ist die Distanz zwischen Quebec und Rio de Janeiro?	km	km
3. Was ist die Distanz zwischen Kiew und Hong-Kong?	km	km
4. Was ist die Distanz zwischen Madrid und New-York?	km	km
5. Was ist die Distanz zwischen Peking and Jakarta?	km	km
6. Was ist die Distanz zwischen Shanghai und New Delhi?	km	km
7. Was ist die Distanz zwischen Lima und Santiago?	km	km
8. Was ist die Distanz zwischen Washington DC und Vancouver?	km	km
9. Was ist die Distanz zwischen Manila und Seoul?	km	km
10. Was ist die Distanz zwischen Sofia und Riga?	km	km
11. Was ist die Distanz zwischen London und Bordeaux?	km	km
12. Was ist die Distanz zwischen Helsinki und Minsk?	km	km
13. Was ist die Distanz zwischen Bremen und München ?	km	km
14. Was ist die Distanz zwischen Berlin und Hamburg?	km	km

Bogen für die individuelle Post-Antwort

Frage 15: Haben Sie genossen, mit Ihrer Gruppe zu arbeiten?

überhaupt nicht	wenig	mittelmässig	ziemlich	sehr
1	2	3	4	5

Frage 16: Alle Teammitglieder haben gerne ihre Kenntnisse mit der Gruppe geteilt.

überhaupt nicht	wenig	mittelmässig	ziemlich	sehr
1	2	3	4	5

Frage 17: Wie kooperativ fanden Sie die Person A, B, und C?
MITGLIED A

überhaupt nicht	wenig	mittelmässig	ziemlich	sehr
1	2	3	4	5

MITGLIED B

überhaupt nicht	wenig	mittelmässig	ziemlich	sehr
1	2	3	4	5

MITGLIED C

überhaupt nicht	wenig	mittelmässig	ziemlich	sehr
1	2	3	4	5

Frage 18: Wie gerne haben Sie mit der Person A, B, und C gearbeitet?
MITGLIED A

überhaupt nicht	wenig	mittelmässig	ziemlich	sehr
1	2	3	4	5

MITGLIED B

überhaupt nicht	wenig	mittelmässig	ziemlich	sehr
1	2	3	4	5

MITGLIED C

überhaupt nicht	wenig	mittelmässig	ziemlich	sehr
1	2	3	4	5

Frage 19: Wie unterschiedlich fanden Sie den Arbeitsstil der Person A, B, und C?
MITGLIED A

überhaupt nicht	wenig	mittelmässig	ziemlich	sehr
1	2	3	4	5

MITGLIED B

überhaupt nicht	wenig	mittelmässig	ziemlich	sehr
1	2	3	4	5

MITGLIED C

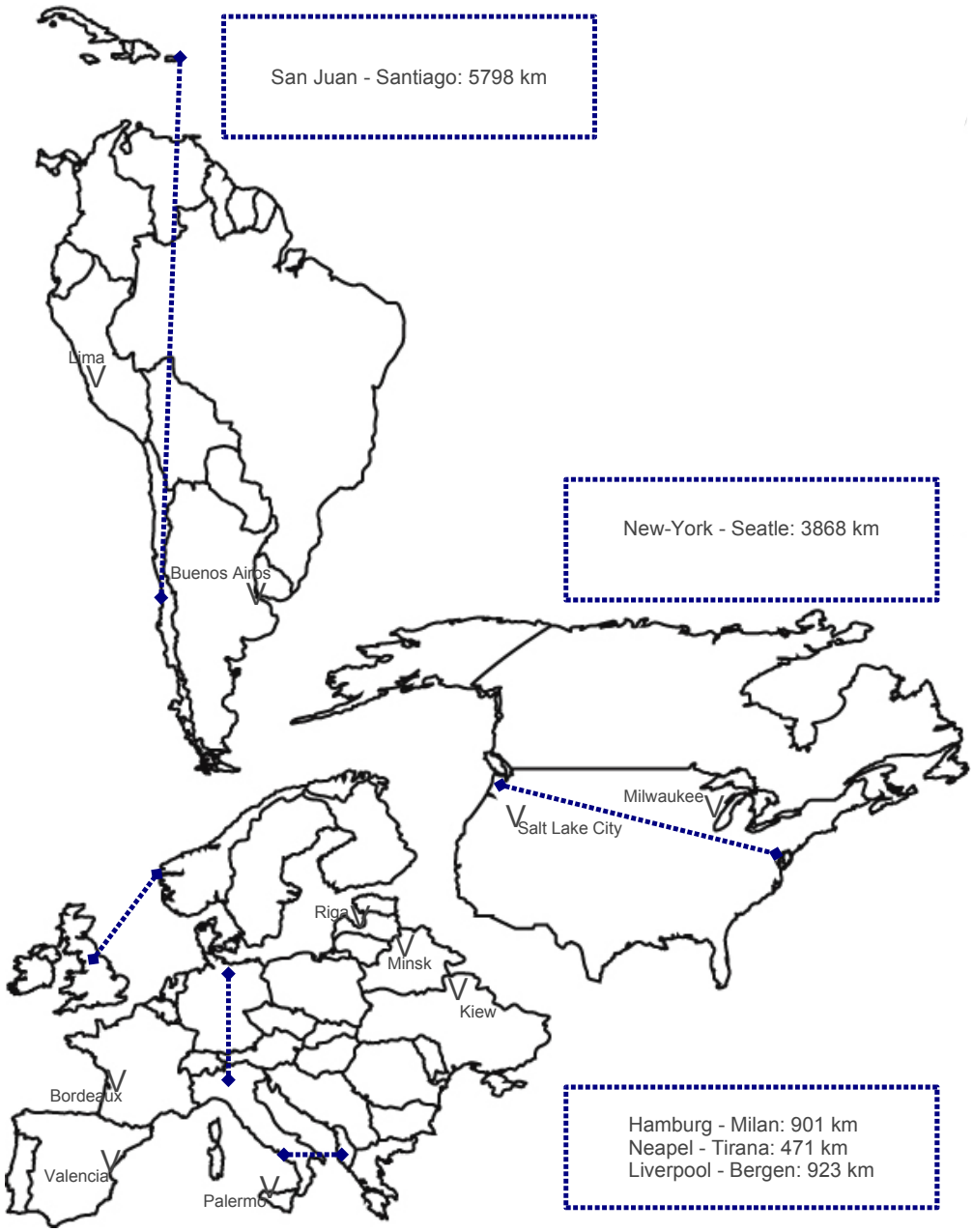
überhaupt nicht	wenig	mittelmässig	ziemlich	sehr
1	2	3	4	5

Frage 20: Erklären Sie kurz, warum Sie andere Gruppenmitglieder gemocht haben oder nicht.
. . . . . .
. . . . . .
. . . . . .

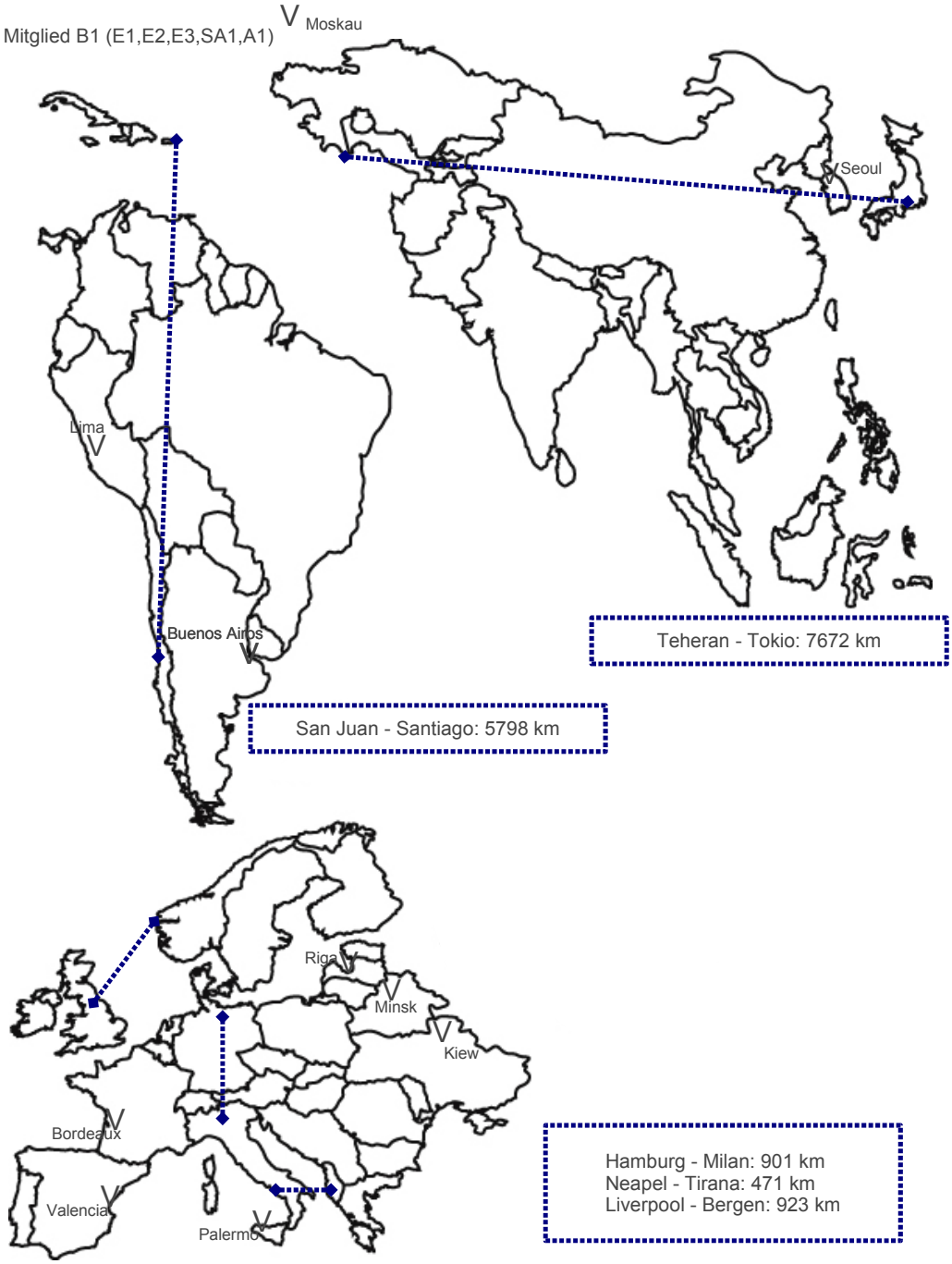
Appendix - D

D1: Workgroup Factual Information (Similar Information/Member 1)

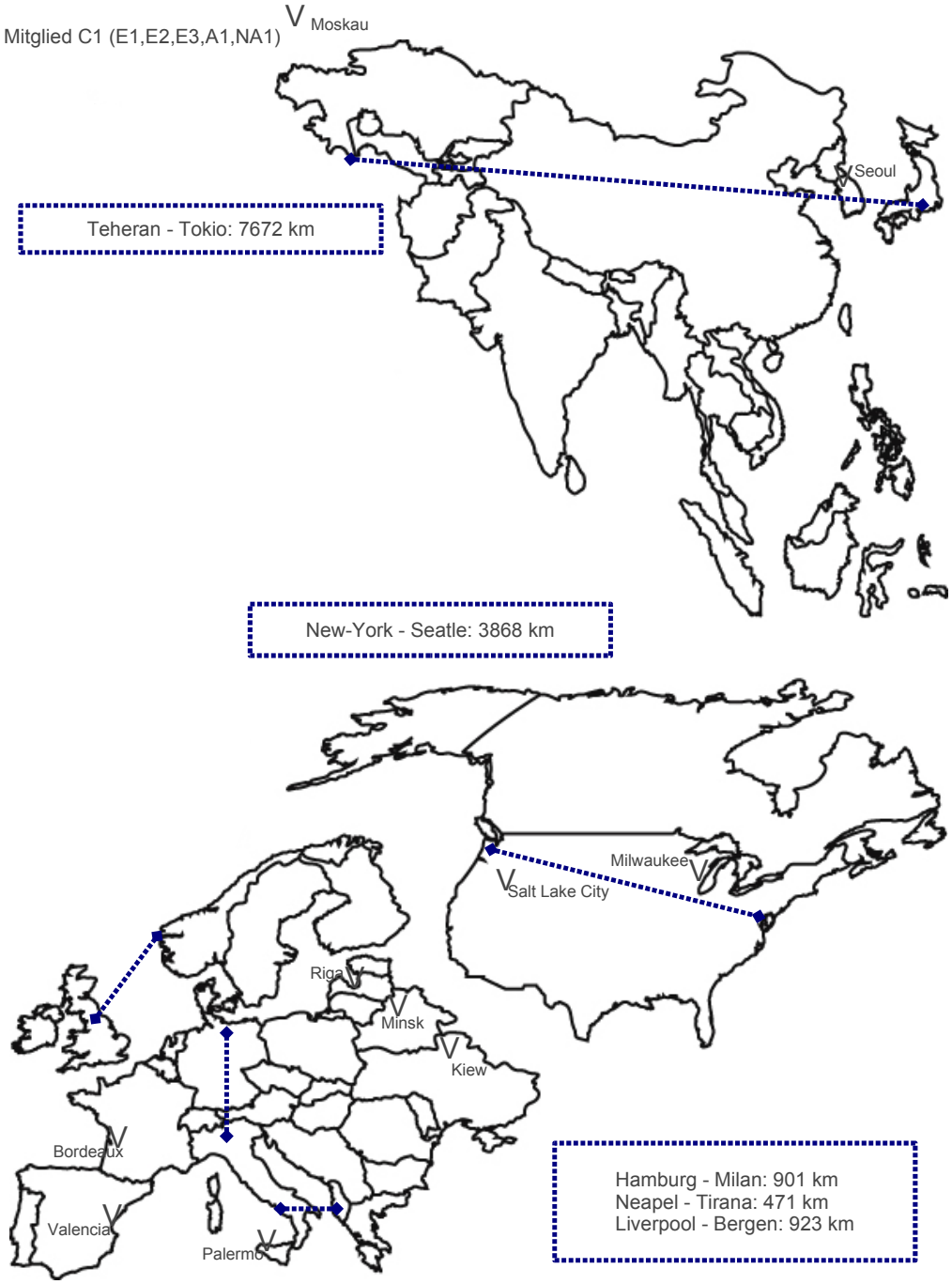
Mitglied A1 (E1,E2,E3,NA1,SA1)



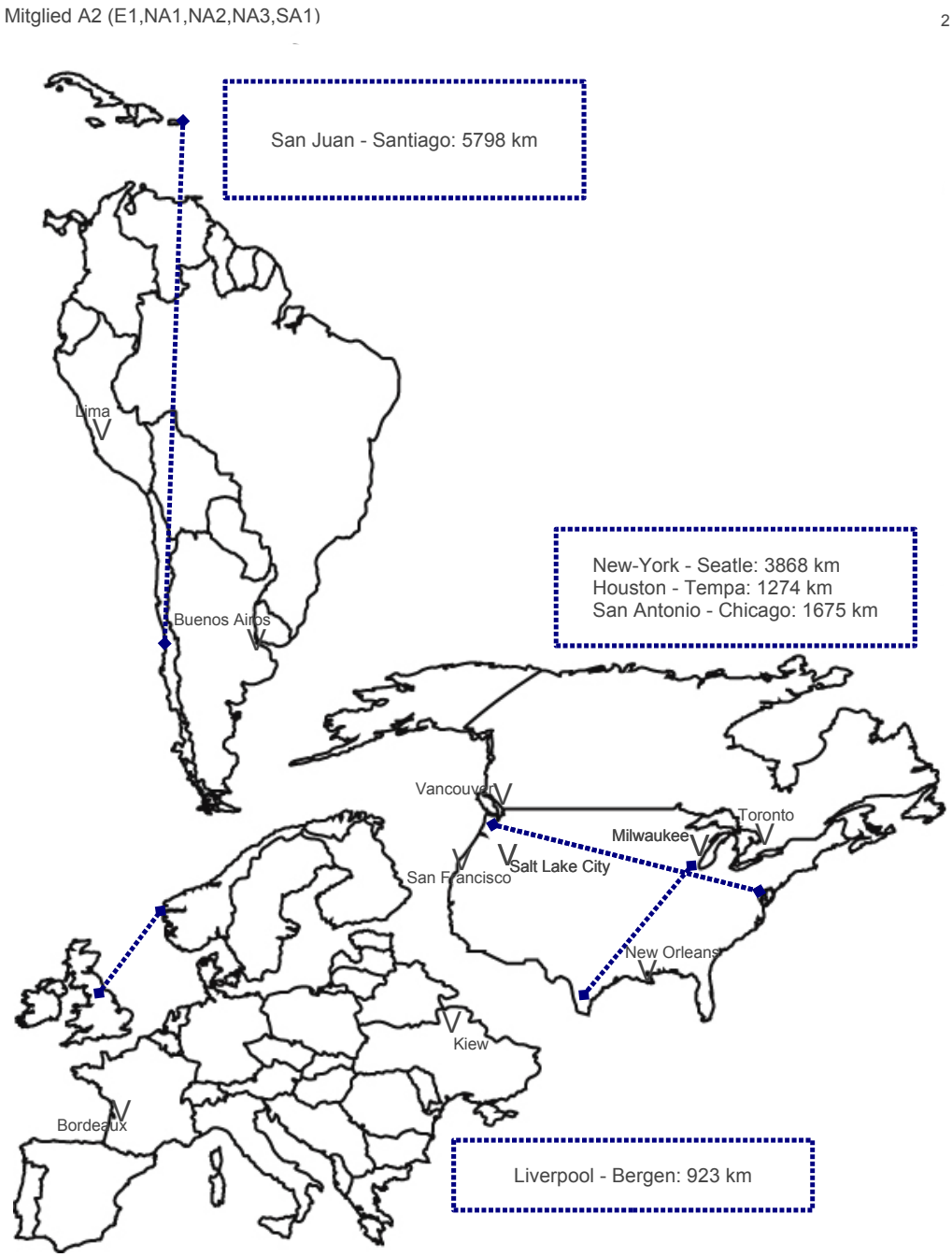
D2: Workgroup Factual Information (Similar Information/Member 2)



D3: Workgroup Factual Information (similar Information/Member 3)

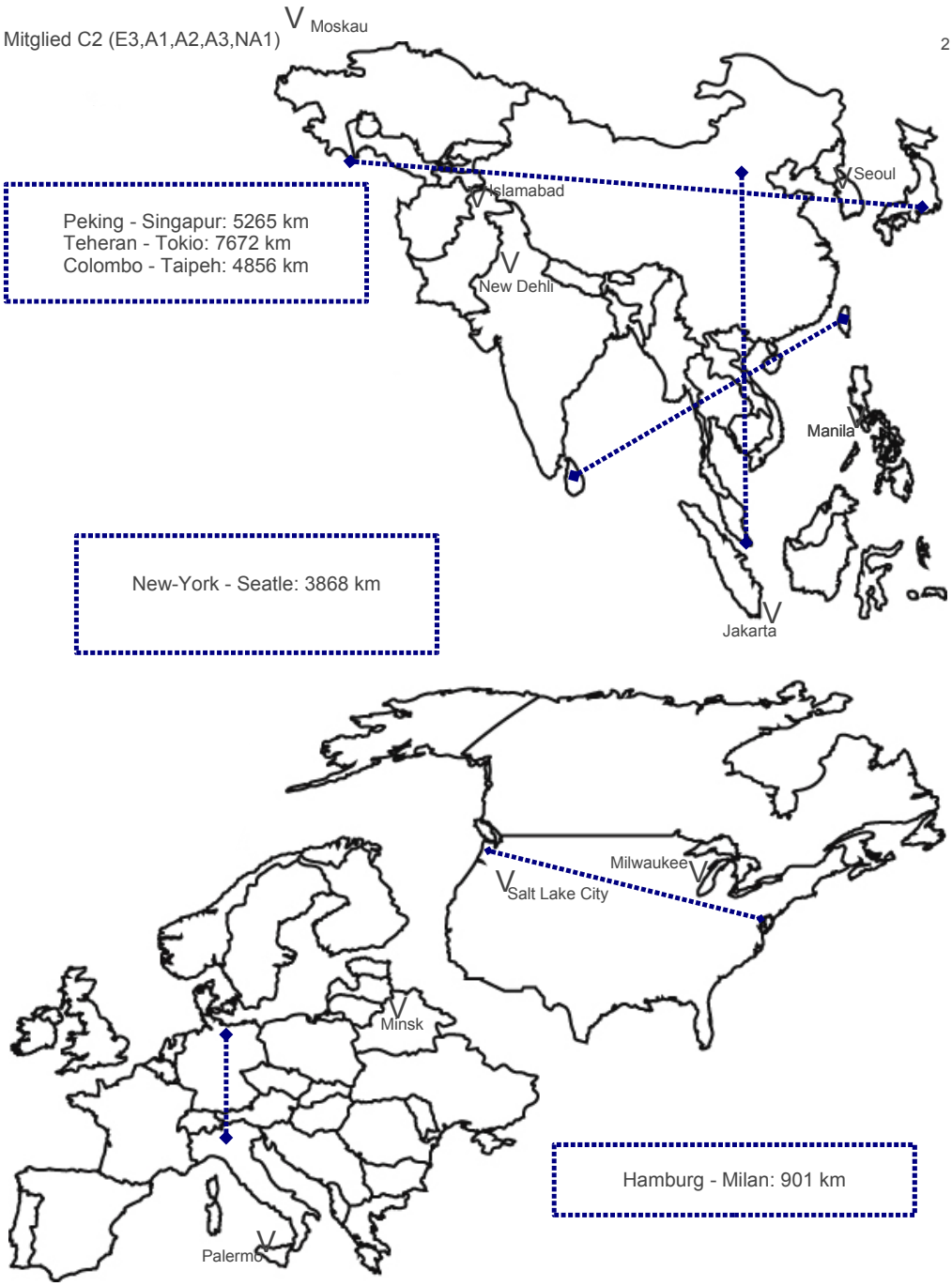


D4: Workgroup Factual Information (Different Information/Member 1)



D5: Workgroup Factual Information (Different Information/Member 2)

D6: Workgroup Factual Information (Different Information/Member 3)



Appendix - E

E1: Email request for participant incentives (in German)

Sehr geehrte Damen und Herren,

mein Name ist Daniel Sciboz. Ich bin Doktorand an der Humboldt-Universität zu Berlin, Institut für Organisations- und Sozialpsychologie. In meiner Dissertation geht es um das Messen der Effektivität in Gruppen, deren Mitglieder verschiedene kulturelle bzw. ethnische Hintergründe haben. Eine Kurzfassung meines Dissertationskonzeptes können Sie auf dieser hier Seite finden:

http://jugendserver.spinnenwerk.de/daniel.sciboz/

Den Gruppenmitgliedern (ca. 260 Personen), die im Rahmen meiner Studie an einem Experiment teilnehmen werden, möchte ich einen Anreiz bieten. Da ich zur Zeit mit einem niedrigen Budget auskommen muss, habe ich andere Wege zu finden, mich bei den Experimentteilnehmern für Ihre Zeit und Kooperation zu bedanken. An die Firma AAAA GmbH habe ich dabei stark gedacht. Sie haben ein sehr erfolgreiches Unternehmen. Wenn es für AAAA GmbH möglich wäre, an mich Produktmuster oder Promotion Items zu schicken, würde ich mich sehr freuen, genauso wie die Experimentteilnehmer. So eine Aktion könnte eine große Hilfe für mich, eine Freude für die Teilnehmer und ein Weg für AAAA GmbH sein, Kunden mit verschiedenen kulturellen Hintergründen zu honorieren bzw. zu gewinnen.

Wenn Sie diesen Aktionszweck interessant finden, können Sie mich unter der folgenden Adresse erreichen:

Daniel Sciboz
Sensburger Allee 30
14055 Berlin
Deutschland

Mit besten Grüßen,

Daniel Sciboz

PS: Wenn Sie eine andere Art von Belohnung als Vorschlag haben, bin ich sehr gespannt!

E2: Email request for participant recruiting I (in German)

Sehr geehrte Damen und Herren,

mein Name ist Daniel Sciboz. Ich bin Doktorand an der Humboldt-Universität zu Berlin (Institut für Psychologie) und untersuche Eigenschaften von Individuen, die (Eigenschaften) sich positiv auf die Gruppendynamik auswirken.

In diesem Zusammenhang möchte ich Sie fragen, ob sich eine Möglichkeit ergeben könnte, Ihre Studenten (eine oder mehrere Übungsgruppen) etwa 40 Minuten an meinem Gruppenexperiment teilnehmen zu lassen.

Die Teilnehmer werden gebeten, zwei kurze Fragebögen (23 & 16 Fragen) auszufüllen und anschließend 14 Fragen in Dreier-Gruppen gemeinsam zu beantworten (die Fragebögen gibt es in deutscher sowie auch in englischer Sprache).

Studenten, die soweit an der Studie teilgenommen haben, hatten Spaß mit der kleinen Aufgabe. Während des Experiments werden alle Teilnehmer Anreize (in Form von Gummibärchen & Schokolade) erhalten. Es gibt weiter eine Möglichkeit für die Teilnehmer, Kinotickets zu gewinnen.

Bitte schreiben Sie mir eine E-Mail, falls Sie interessiert sind.

Ich bedanke mich für Ihr Verständnis und Ihre Zeit.

Mit freundlichen Grüßen,

Daniel Sciboz

E3: Campus flyer for participant recruiting II (in German)

Gruppendynamik

Hallo!

Ich suche nach Menschen, die gerne an einem kurzen Experiment im Rahmen meiner Dissertation teilnehmen würden. Ob deutsche Studenten oder Studenten aus anderen Ländern, alle sind mehr als willkommen. Studenten, die soweit an der Studie teilgenommen haben, hatten Spaß mit einer kleinen Gruppentätigkeit (Dauer: 50 - 60 Minuten).

Diese Studie hilft nicht nur mir mit meiner Dissertation, sondern auch anderen Fachleuten, Organisationen sowie jedem und jeder, die Eigenschaften von Individuen besser verstehen wollen, die (Eigenschaften) sich positiv auf die Gruppendynamik auswirken. Die Teilnehmer werden gebeten zwei kurze Fragebögen auszufüllen und zum Schluss 14 Fragen in Dreier-Gruppen gemeinsam zu beantworten. Während des Experiments werden alle Teilnehmer Anreize (in Form von Gummibärchen & Schokolade) erhalten. Es gibt weiter eine Möglichkeit für die Teilnehmer, Kinotickets zu gewinnen. Sie können zwischen drei verschiedenen Terminen wählen:

Freitag, den 12. Mai 2006 um 14 Uhr im Raum 102, UdK Berlin, Hardenbergstr. 33,
Freitag, den 19. Mai 2006 um 14 Uhr im Raum 102, UdK Berlin, Hardenbergstr. 33,
Freitag, den 26. Mai 2006 um 14 Uhr im Raum 102, UdK Berlin, Hardenbergstr. 33.

Es wäre schön, wenn ihr euch unter folgender E-Mail (dsciboz@arcor.de) mit einer kurzen Nachricht melden würdet, um zu sagen, an welchem Tag ihr teilnehmen könnt, falls interessiert. Ich bedanke mich für euer Interesse und eure wertvolle Zeit.

Mit freundlichen Grüßen,

Daniel

Acknowledgment

I would like to say thank you to all who accompanied, guided, supported, and inspired me during this investigation. Moreover, I would like to praise anyone who intends to read it. The keywords you used in order to find it show eagerness to learn more about the multivariate world of workgroup research.

Complex group dynamics challenge us every day, especially when our dialogue with others is affected by and deals with very different social and organizational issues. Understanding some components of this challenge should reward you and those you are interacting and cooperating with.

Finally and most importantly, I am very thankful to my advisor and mentor Prof. Dr. Wolfgang Scholl as well as the following colleagues who offered their leisure time, insights and expertise in reviewing parts of or the whole manuscript:

- Dr. Paul Yelsma *(PhD - University of Michigan)*
- Dr. Lora Helvie-Mason *(EdD - Ball State University)*
- Dr. Marcy Meyer *(PhD - Michigan State University)*
- Inna Litvinova *(MA - University of Connecticut & BSc - Potsdam Universität)*
- Dane Ligoure *(MBA - City University of New York)*
- Chad Schumacher *(BSc - Western Michigan University)*
- Ila Baker *(MA - Michigan State University & MA - Western Michigan University)*
- Steve Toner *(BSc - Western Michigan University)*

Selbständigkeitserklärung

(inkl. Erklärung über die Ersteinreichung der Dissertation & Erklärung über Kenntnis der Promotionsordnung)

Hiermit bestätige ich die Ersteinreichung der vorliegenden Arbeit als Dissertation. Ich versichere, dass ich diese Arbeit selbständig verfasst habe, nur die angegebene Literatur verwendet und wörtlich oder inhaltlich übernommene Stellen als solche gekennzeichnet habe. Im Weiteren erkläre ich, dass ich die Promotionsordnung der Humboldt-Universität zu Berlin zur Kenntnis genommen habe.

Fribourg, den 06.06.2009 Daniel Sciboz